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## Editorial Notes.

THE Diary which we shall offer to the trade for 1872 will be a splendidly useful one for pharmacists, and we hope they will patronise us very liberally indeed. We have not a universal constituency to appeal to, but we can promise that no diary in the market will be as good as ours at the price, and the special information which it will contain in

the way of formulæ, etc., will make it of so much extra value to pharmacists. It will also contain all the general information which every diary includes. We are getting up two editions; one on good paper, bound in boards, with cloth back, falls open and lies open easily, made to stand at least thirteen months of constant use without appreciable injury; that is the shilling article. Then we shall have a book bound handsomely in cloth, printed throughout on thick writing paper, and the diary portion interleaved with blotting paper, for two shillings. Postage of either of these, and in any numbers, will be 3d. each. But to save that, and to send the books with less risk of damage, we are willing to send for enclosure to any city house all orders received between this and December 31st, 1871. Orders are now requested, and will be carefully filed and registered till the books are ready.

IN this issue of our journal, Mr. Joseph Ince announces the completion of a design which he himself suggested about two years ago, and the execution of which he has personally superintended with characteristic perseverance. Commenced and carried through purely as a labour of love, it is incumbent on us, in the name of the pharmacists of Great Britain, and especially in the name of the students of pharmacy, to acknowledge the great value of the results attained. Thirty handsome volumes of autograph prescriptions, containing each on an average two hundred and fifty, so selected as to present in each volume the greatest possible variety of caligraphies, authors, countries, and systems of prescribing, are now placed over the country ready for reference, and as a means of instruction. Fifteen are in London, in custody of the Board of Examiners, but open under proper regulations to the student, five in Edinburgh, and one or more in Liverpool, Manchester, Glasgow, Leeds, Bristol, Nottingham, Hull, Bradford, and other associations. Scarcely a single practitioner of eminence is absent from this collection: the foreign tours of distinguished pharmacists are added, the whole series belonging to the late Jacob Bell (his own private examination book not excepted), and samples of the mode of the art of healing ranging from Dr. Paris, who wrote the "Pharmacologia," to Palmer, who was fond of strychnine. The ordinances rescued from the Communists in the Rue de Rivoli, as well as the pencil prescriptions written in the backwoods of America, find their appropriate place. In order to present easy and intelligible prescriptions for the use of apprentices and others, the provincial volumes have been doubled. We say this is a great work, and its prosecution is a proof of the thorough heartiness with which Mr. Ince works in the cause of pharmacy. But we would not suggest any formal expression of thanks. Let students, young students especially, in whose reach one of these volumes may be, apply themselves to its study—not as a careless pastime, but as a real item of their education, the mastery of which will help much in fitting them for the occupation to which they have devoted themselves.

A CORRESPONDENT who writes with authority, but who, we regret, withholds from us permission to publish his name, calls our attention to the ideas prevalent at the Horse Guards with regard to the duty of dispensing medicine. Malta is instanced. At that station there is a garrison of six regiments of the line, a brigade of artillery, two companies of engineers, and a regiment of local artillery, and yet for this large number of troops the Government does not provide a single qualified dispenser. The dispensing is done by so-called "compounders"—men taken from the ranks—who, after a few weeks in the regimental hospital, are paid a little extra, and put to compounding

medicines of which they can know nothing. The only qualified man there has the rank of apothecary, and his duty is to be storekeeper, while the most responsible part, "the actual dispensing," is performed by these "compounders." There is a dilemma here for some of the departments. It is evident that a duty which the Privy Council deems of great importance is regarded at the Horse Guards with almost contemptuous indifference. The Government is undoubtedly convicted in this matter of straining out a gnat at one moment and swallowing a camel at the next.

At the meeting of the Massachusetts College of Pharmacy on July 13th, 1871, the following gentlemen, among others, were elected honorary members, "in recognition of the eminent services they have rendered to pharmacy, and as tokens of the high esteem in which they are held by the members of this college:"—Professors Attfield and Redwood, Messrs. Daniel Hanbury, Henry Deane, and H. B. Brady.

In our last number we reported a very sad case of mercurial poisoning, resulting in the death of a little girl, the daughter of Mr. R. N. Fowler, M.P. At the inquest held at Chippenham, the jury added to their verdict the following very severe sentence respecting the doctor who had attended the deceased:—"The jury are of opinion that great blame attaches to Dr. Edward Evan Meeres." It is a matter of simple justice to Dr. Meeres, that we should allude to this case again. He used a solution of corrosive sublimate, prepared according to a formula published by Dr. Tilbury Fox, and that gentleman, whose judgment on such a matter is second to that of no one in England, writes to the *Lancet* (September 16th), expressing the deepest sympathy with the parents of the little child, but adding also, "I have no hesitation in saying that the verdict of the coroner's jury is atrociously unjust towards Dr. Meeres. Dr. Meeres seems to have used the remedy with sufficient care, and he was not using it for the first time. It is clear to me that the patient was one of those who have an idiosyncrasy against mercury." Dr. Fox also remarks, "The remedy is not mine at all. It was used before I was born, but it is described with other formulæ in one of my works. But I have used it very freely and extensively for about thirteen years, and have never seen its application followed by a single evil consequence in any case. In Dr. Meeres case there must have been some very exceptional circumstance operating, and that I feel sure was idiosyncrasy; and, as far as I can see, no foresight on his part could have appreciated this.

In a leading article, the *Lancet* also takes the same view, a view, the justice of which it is only fair that we should admit and publish.

We have received the programme of the London Institution for the forthcoming session, from which it is evident that the proprietors are proceeding with a plan of popularizing the vast educational resources at their command. A limited number of tickets are to be issued to students and teachers unconnected with the Institution on certain terms to the educational courses of lectures. These are: "Elementary Physiology," a course of eight by Professor Huxley; "Elementary Chemistry," a course of eight by Professor Odling; "Elementary Music," a course of six by Professor Ella; "Elementary Botany," a course of six by Professor Bentley. Four evenings are also to be devoted to the reading and discussion of papers in the theatre, which is a new feature; and besides the announcement of six of their brilliant conversations with lectures at each, a holiday

course of four lectures by J. C. Brough, Esq., F.C.S., the principal librarian, is promised, "On the Philosophy of Magic," adapted to a juvenile auditory.

Mr. E. B. SHUTTLEWORTH, in the *Canadian Pharmaceutical Journal*, reports some experiments which prove once more the universally admitted fact of the utter unreliability of drops, teaspoons, tablespoons, wine-glasses, as mediums for the measurement of medicines. Every physician knows that if he order his patient to take a teaspoonful, say, of a certain mixture, it will be the barest chance in the world if the dose actually taken be what the doctor intended within fifty per cent. This may be of but little consequence in many cases, but even then, as Mr. Shuttleworth remarks, it does appear strange, and not a little inconsistent, that in the dispensing of medicine such care and nicety should be required, while its administration is allowed to be performed in a manner which, at best, can only approximate to correctness.

#### LIBRARY OF THE FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.

CONCLUDING NOTICE, BY JOSEPH INCE.

[I have been assisted in this paper by Messrs. A. Kinninmont and R. Brodie, both of Glasgow.]

NOTE ON MYREPSUS.—*De Hieris.*

A LONG chapter containing no less than thirty-seven formulæ is given under this heading. The meaning of the term has given rise to some speculation: obviously *Hiera* is only the Latinized form from *ἱερός*—hence it might apply to—

1. Preparations used in religious service. (The most natural supposition.)
2. Preparations highly valued and kept secret.

The literature of the subject is curious. The word is used by Scribonius, a Roman physician who wrote A.D. 52, and with him it means "Antidote." The old Faccioli dictionary explains that it was so called from its supreme value, or from its composition being kept secret or mysterious.

Mesué says—"Hiera interpretatur medicina divina—Again—Hiera dicitur medicina divina saluans ex virtutibus suæ naturæ. Also there is this sentence in books of reference:—Hiera antidotus interpretatione Galeni et Hippocratis. Nevertheless, the *Hiera* in *Myrepsus* means solely an aromatic stimulant confection—the chief ingredients being aloes, euphorbium, colocynth, and aromatics, made up with honey. The *Hiera* is specially adapted to promote the menses and is an *antidote* against headache, nervousness, and epilepsy; in fact, a medicamentum ictericis et ischiadis conveniens. [Hiera Picra, once made with aloes, cinnamon, and spices, now with aloes and canella, is a perfect illustration of the signification of the word.]

I.

Glauber (Jean Rodolphe), Chemist, Wordist and Egotist. Born at the commencement of the sixteenth century. Scarcely anything is more melancholy than to think that one who composed so many ponderous treatises, elaborated them with equal care and vanity, should be recollected only by the salt which bears his name. Yet the world is not altogether wrong when it gives its verdict. Glauber's style is an incessant beating up for a sonation—there is always some deep-hidden mystery, which either has been explained in shrouded language which he is going to make clear, or else there is some truth, which, aided by divine providence, he is about to reveal to his less illuminated brethren. He

never does either one or the other; sentences are heaped Alps on Alps; great swelling words of vanity, ending in nothing surge upon the reader; the mountain labours, but the product is not one ridiculous mouse; and at the very cream of our expectation, there is a large display of piety, and a promise that at some future time he will write another book and set all things right.

Fond of the marvellous, he was led astray by the extravagant notions of the chemistry of his time. His researches tended towards the discovery of an universal panacea, the philosopher's stone, and the chimeras of alchemy. Furnaces were his boon companions, and he has been ranked on the same level as Paracelsus. Grave things are said against him on the score of pretended secrets, an account of which he did not afterwards fail to publish in his own works. Still, some of his contributions to chemistry and *Materia Medica* have proved of use. His examination of the residue of the decomposition of sea-salt, by sulphuric acid, resulted in the discovery of the sulphate of sodium, which has retained its name as Glauber's salt to the present time. Some of his essays (thirty-two in number) must be enumerated.

I. *The Prosperity of Germany*. Amsterdam, 1656.

II. *Furni novi philosophici*. Description d'une nouvelle machine de distiller. Amsterdam, 1648. A work on Alchemy containing the Transmutation of Metals.

[Philosophical furnaces, containing a new art of making spirits, oyls, flowers, and other medicaments, by the help of the first of those furnaces, after a very easy and peculiar manner out of vegetables, animals, and minerals, with their chymical and medicinal use, in five parts.]

Dr. Tilden says of this work—"Glauber was essentially an experimenter. This book of his is made up entirely of practical details; he rarely enters into theoretical explanation or discussion. The natural result was that he got through a great deal of useful work, and left behind him an example and a name." I suppose *example* is a misprint for *earning*.

III. *De Medicinâ universali sive de auro potabili vero*. Amsterdam, 1658.

[Of the Tincture of Gold, or the true Aurum Potabile, what it is, and how it differs from the false and sophisticated Aurum Potabile, how it is to be Spagirically prepared, and how to be used in Medicine.] Described in sentences of marvellous windiness. "Dose from three grains or drops to twelve or more, but to children one, two, or three." "And so (Glauber) make an end, hoping to have pleased my neighbour, for without doubt, who useth this golden medicine well, shall do well, chiefly lifting up his heart (acknowledging his sins) to God the Giver and Creator of all good, in filial humility, imploring his help and blessing; which the omnipotent God and Merciful Father that he would bestow on us his temporal blessing in this life with sound health, and hereafter life eternal, of his free grace. Let us pray—Amen."

IV. The mineral work divided thus—

First Part, wherein is taught the Separation of Gold.

Second Part, of the Birth and Nativity of Metals.

Third Part, The Heaven of the Philosophers; or, a Book of Vexations.

Next we come to the Apology of John Rudolph Glauber against the Lying Calumnies of Christopher Farrner. Farrner, it appears, in return for certain benefits, was to devote himself for ever to Glauber interests. Eventually he grew tired of this control, and even vendicated a long list of Glauber's preparations. Thunder and lightning was the result.

V. *Miraculum Mundi* (Amsterdam, 1653), or Universal Menstrum, by which vegetables, animals, and minerals may

easily be transmuted into most salubrious medicines, and the imperfect metals into perfect and permanent.

VI. The continuation of *Miraculum Mundi*, in which nature is clearly laid open to the eyes of the whole world; demonstrating that the chief medicine of vegetables, animals, and minerals may be prepared of saltpetre, and that saltpetre truly merits the name of an universal menstruum.

VII. The second part of *Miraculum Mundi*, in which is described the magnificent coming of Elias the Artist, and that the wonderful Salt of Philosophers is the most excellent Medicine of Vegetables, Animals, and Minerals. Elias, the Artist = *Artis Salia*, the Salt of Art. "I (Glauber) doing this, take Paracelsus out of his sepulchre, and (as himself predicted) turn him towards the Orient; that is, I expose him to the light, by which the verity of that prediction may be discerned by all." The treatise of Paracelsus is subjoined, a man who styles himself [of Hohenheim, Monarch of Philosophers, Prince of Spagyrist, Chief of Astronomers, Paradoxical Physician, and great Master of Mechanick Secrets.]

That one inflated egotist should exhume another to keep him company requires so little comment that we may leave (VIII.) the *Pharmacopœia Spagyrica*, Amsterdam, 1654, and bestow a passing notice on two other Glasgow library books.

#### A.—TURNBULL.

An Investigation into the Remarkable Medicinal Effects resulting from the External Application of *Veratria*, by Alexander Turnbull, M.D., 1834.

"Pure *veratria* is entirely soluble in alcohol, and burns without leaving any residuum; but perhaps the simplest and best test is to dissolve four grains in a drachm of alcohol, and to rub a small quantity of this solution on the wrist or forehead; when the *veratria* is good the heat and tingling manifest the themselves after the friction has been continued for two or three minutes, and the length of time required to produce this effect affords a tolerably correct estimate of the efficacy of the medicine."

On the Preparation and Medicinal Employment of *Aconitine* by the Endermic Method in the Treatment of *Tic Douloureux* and other Painful Affections. 1834.

Rx *Aconitinæ*, gr. ij.

Alcohol, gtt. vj.

Tere optime et adde

Axung 5j. Ut fiat unguentum.

AMMONIATED EXTRACT OF ACONITE.—Evaporate carefully, and at a low temperature, the tincture of the dried root of the plant to the consistency of an extract. To every drachm of this eight or ten drops of liquor ammonia should be added, and after the mixture has stood a short time in a very gentle heat, to drive off the excess of ammonia. It is to be used in the form of ointment, according to the following prescription:—

Rx Extract *Aconit. Ammon.*, 5j.

Axung., ʒijj.

M. Ut fiat unguentum.

#### B.

A Memoir on Congenital Club Feet, translated from the Italian of Antonio Scarpa, with five original engravings by Anderloni. The engravings are interesting, as they represent the Scarpa boot as at present worn. Beyond a few mechanical additions, the boot sold this day by our modern instrument makers (and used so beneficially), is the same as Scarpa's original invention.

In my last paper I made two mistakes: Dr. Hugh Miller is a Fellow of the Faculty—not the librarian. Dr. D

Campbell Black delivered the address which made mention of Myrepsus. I shall not, however, make a third mistake in forgetting to thank both the above, Dr. James Dunlop, Alexander Duncau, B.A. (the librarian), and Messrs Kinninmont and Brodie. For the second time I acknowledge the thoughtful kindness and the cordial co-operation of the gentlemen of Glasgow.

Now for a strange book belonging to Mr. Brodie—*Les Secrets et Merveilles de Nature*, recueillies de divers auteurs, et divisees en xvii livres. Par Jean Jacques Wecker, de Basle, Médecin de Colmar. Revue, corrigé, et augmenté. Avec une table tres auple. A Reuen: chez Claude le Villain, Libraire et Relieur du Roi, demeurant à la rue du Bec, à la benne Renommée.—MDCXIII.

"D'un livre escrit en la main."

It is mentioned in the auctioneer's catalogue as "a collection of curious secrets of nature and art, recipes, experiments, arithmetical, chemical, and juggling tricks."

Amongst its multifarious receipts occurs a sign which was perfectly strange to myself, and the signification of which there has been much difficulty in determining. It is an arrow placed thus ←

No small amount of perseverance is necessary to discover the value of the symbols used in Græco-Latin works of this century, particularly as no constant system was employed. Thus we find , , and \*, are all equivalent to a drachm. The student will allow that this is likely to cause embarrassment.

Some trouble may be avoided by recollecting that (with regard to terms in frequent use) the *hemina* equals four acetabula; that the acetabulum equals two ounces; and the *olyseion* equals 1-7th the hemina. In the first chapter of Marcellus there is an excellent table of Greek and Latin weights and measures; but even the most elaborate dictionaries allow one to swim about in the most glorious uncertainty. The following passage throws considerable light upon the matter:—

"Græci medici pondera medicamentorum ad drachmas redigunt, quæ quia ad denarium nostrum conveniunt, octoginta enim et quatuor in libram incurrunt, pro nota Græcæ drachmæ quæ est figuræ talis Z notam denarii Latinam quam nosti, posui idest hanc \* et ad ejus pondus Græcas drachmas rediges." (Scribon.)

Mr. Kinninmont appears to have completely cleared up the question of the "arrow." It means a scruple. He found two or three of the identical recipes in the *Antidotarium* of Joan Jacobus Wecker, 1617 (of which Mr. Brodie's book is the French translation), in one of which "obelos duos" stood for ← j; and in another "scrupulum." Scribonius describes the *Victorius Argenteus* as equal to *duo oboli hoc est scrupulum*.

Let me add a few specimens of the style of *Les Merveilles*. The original spelling is preserved.

# I.

Pour dorer le fer.

Prenez d'eau commune, iij liu.

D'alum, ij onces.

Du vitriol Romani, j once.

De fleur d'airain, j denier.

De sel gomme, iij onces.

D'orpin, j once.

Meslez les & faites bouillir ensemble. Quand ils commenceront de bouillir adjoûtez ij du tartre delié de vin, du sel commun, demie once, laissez les bouillir quelque peu: puis les otez de dessus le feu, & estcignez le fer avec ceste eau, puis l'eschauffez au feu, & le polissez.—*Alexis*.

# II.

Pour empêcher quelqu'un de dormir. Vn œil d'Arondelle mis dans vn liet, ne permettra point que celuy qui y sera couché puisse dormir, jusques à ce quil soit osté.—*Albert le grand*.

"To make a woman tell the truth." Take a live water frog, and cut out its tongue; put it back in the water, and place this tongue on a part of the heart of a woman while asleep. On being questioned she will speak the truth.—*Albert*.

This strange book, from which so little can be quoted, is well worth attention as a curiosity. It is a type of the fanciful writing of the period, treating of most things—of Ged and alchemy; of demons, angels good and bad; and how to fatten geese. There are wonderful discussions on mathematics, on natural magic, on grammar, logic, and rhetoric; also advice how to catch fish; to prevent cats from eating pigeons; to make oneself loved; to draw teeth in a painless manner; while Chapter 19 describes the nature of the Divine Trinity.

We smile; but out of the intensity of this rubbish higher thought has sprung, based not on the dreams of speculative theory, but on fact.

The book is a beautiful specimen of type and careful printing.

## CONTINENTAL CHEMISTS.

RUSSIA (*Second Notice*).

**P**HARMACY, as a science, as well as an art, being in no way confined to a particular people or language, but held in common by all, has for the last fifty years been watched by the apothecaries of Russia with eager eyes, and made them feel how far behind other countries they would be if no efforts were made to improve the social, commercial, and scientific position of pharmacy in their country.

In the beginning of this century pharmacy was flourishing in France more than anywhere else in its scientific aspect, but from the introduction of patent medicines, pharmacy, as a science, began to sink very soon, while in Germany it began to flourish and reach (through the scientific care paid in the colleges) the highest standard. As neighbours, the apothecaries of Russia followed the German system of pharmacy, without being able to hide the fact that the Russian Government does nothing to improve pharmacy, and the status of the art is therefore much more likely to become lowered in Russia than in France, because in France the outward elegance with which it is invested hides much that is substantially deficient.

Notwithstanding the great efforts the Russian apothecaries make for improving their commercial and scientific position, it is only with difficulty they overcome the antagonism of the Medical Council,\* which places many difficulties in their path. The Russian pharmacist, in fact, is not a free agent, for in all his movements he is jealously watched by this Council, and is indeed not unfrequently assailed by physicians in the public press for supposed breaches not only of scientific but even of commercial propriety.

The apothecaries' "Taxa"† is an especial object of these attacks, and most curiously is it forgotten that this "Taxa" has emanated not from the apothecary but from the Medical Council itself, and that the apothecaries of the interior of Russia are ignorant of the principles upon which it is based, and that they had no part whatever in fixing its prices.‡

\* The Medical Council has hitherto consisted of medical men, and it has only this year been decided that two deputies of the pharmaceutical body should also take part in discussions of pharmaceutical interest.

† Vide CHEMIST AND DRUGGIST, July 15, 1871.

‡ A new commission has recently been appointed to revise the "Taxa," and under this prices cannot fail of being reduced. In England, where no "Taxa" is in existence, and where medicines are considered much dearer, even medical men do not venture to interfere with prices; on the contrary, they are sufficiently glad if their patients receive the medicine in the right quantity and quality. But why is it so? Is it that the apothecaries of Russia are under medical guardianship, but in England free from it?

To anyone interested in pharmacy who considers this state of things fairly, the situation of a Russian apothecary will not appear to be all *couleur de rose*. But for the rest, the social position of a Russian apothecary is looked upon as a very honourable one, once that he has attained the good fortune to be proprietor of a shop. At least, the more educated part of the public acknowledges his valuable accomplishments. Through his adroitness and activity he attains the confidence of the public, and attains honourable and social distinctions and posts of trust often in advance of others.

The privilege of opening a pharmacy in Russia is rather limited, which makes its value a very high one, and this is a great grievance to a part of the pharmaceutical body, because only those who possess means are able to get on. Not unfrequently, therefore, young men who have served three or four years as apprentices, and passed their examinations, change for some other business.

In Russia the price of a business is estimated by the income, or by the yearly number of prescriptions, and is double or treble the income. A business with a yearly number of 14,000 prescriptions is sold for 30,000 roubles (about £4,800); another, with an income of about 4,000 roubles yearly (£635), is sold for 8,000 roubles (£1,270); the prices, of course, in large towns are still higher.\*

The very slight advantages offered to an apprentice, and the high-class education which is required of him now, stimulate at present very few young men to enter the pharmaceutical profession. Generally, an apprentice is taken without premium; nay, he gets some remuneration by the end of his term, and is found in clothes by the principal during his apprenticeship. Up to a few years ago an apprentice had to possess the elementary knowledge of the fourth class of a gymnasium, but it was found insufficient, and very likely the law may yet be that a full gymnasial course shall be necessary.† The first examination after apprenticeship is as "assistant" (minor examination); having passed that, he has to serve for three years before he can begin his studies for a "provisor" (major examination). The highest degree is the "Magister of Pharmacy."

The salary of an assistant has increased of late, and is from twenty-five to forty-five roubles per month, on account of the scarcity of capable young men at present. The hours of labour are from six a.m. to eleven p.m.

From the fact that the greater part of the apothecaries are Germans who try to bring pharmacy in Russia to the highest standard, it is very common for strong discussions to take place between German and Russian chemists. The Pharmaceutical Society of St. Petersburg, which has existed for some fifty years, tries to do its best in the way of improving the pharmaceutical position, but the formation of several other societies in Moscow, Kiev, and Warsaw has greatly decreased the number of members, and it counts only now about one hundred members, three-fourths of which are residents of St. Petersburg and its vicinity, and only one-fourth belong to the rest of the empire.

It has of late been discussed in Russia why the German language should prevail, and not the Russian; especially as the Pharmaceutical Society publishes its journal in the German language. Answering this question, the *Journal* says that a short sketch of the pharmaceutical relations in Russia suffices to show that, in spite of its largely extended surface, it possesses only about 1,500 or 1,600 apothecaries' shops, and that the proprietors of these are mostly Germans (the apothecaries from the east provinces, St. Petersburg, Moscow, and a few others being excepted), and that there are very few of other towns who would take an interest in pharmacy as a science. Another reason is that Russian is not a modern or much spoken language, and would there-

fore be quite useless in foreign countries; whereas the German books of pharmacy may be looked upon as the basis of the highest pharmaceutical knowledge.

The internal arrangements of the shops are sometimes most elaborate (there is no outward show, with the exception of coloured glass globes, and a few large show bottles in the windows). The establishment consists of several departments—the *shop and dispensing department*, the *drug store room*, and the *laboratory*, which is generally provided with all the apparatus necessary for pharmaceutical and chemical operations. A *library* provided with scientific books is indispensable.

Although the apothecary prepares the Galenical preparations himself, he is not bound to do so; he may get them from other apothecaries, or from wholesale druggists, but is answerable for their purity.

An inspection of the shops takes place every year or two, and is performed by a Government medical officer and two chemists. The former inspects the books, boxes, etc., in fact, takes a general survey of management and cleanliness; the latter test the drugs, tinctures, etc., as to their purity and strength. The inspection over, the medical officer signs the books. No notice is given of the time when these inspections may take place. Should a chemist be unexpectedly surprised, and found not to look properly to the regulations, he is censured or fined.

All the poisons have to be kept separate from other drugs in cupboards or boxes locked up. The cupboards or boxes in which they are kept should have the inscription "*Medicamenta heroica*" or "*venena*," and should contain separate scales, weights, spatulas, mortars, etc., for the exclusive use of these poisons. The keys are to be left with the manager, or under the care of one of the assistants, and should the latter be absent from the shop, he is bound to give them to the assistant under him. The one in possession of the keys is bound to ascertain if the poison is really ordered, and in what quantity, and after seeing that quantity weighed out, to leave it with the dispenser. For a wrongly-prepared medicine he in whose possession the keys are is answerable.

All the strongly-acting medicines have to be kept separate from other drugs.

The poisonous drugs and strongly-acting medicines have to be entered in a separate "*poison-book*" previous to selling them, and this should be signed by the buyer as well as by the seller. This law must be complied with, not only with prescriptions, but in selling poisons to chemists, artists, manufacturers, and tradesmen.

In a commercial point of view an apothecary very seldom goes beyond his general work, *i.e.*, of compounding prescriptions and retailing (with the exception of supplying hospitals and other large establishments with quantities of drugs). Taking into consideration the large amount of capital, and the slow way of turning money, together with the great responsibility of his position, he does very little as a merchant.

It may interest those who deal in patent and secret medicines to know the regulations necessary for their importation into Russia. These regulations are:—

1. A petition has to be written on a (one rouble) stamped paper, to be sent free to the Manufacture and Foreign Commercial Department of the Finance Ministry (not to the Medical Department).
  2. The exact composition of the remedy must be stated.
  3. Only those remedies can be approved of by the Medical Council which have been examined and found useful by a foreign medical faculty, or any other scientific institution of equal standing.
  4. The remedy should be so constituted that a long journey or time should not interfere with its properties.
  5. It should not contain a decidedly poisonous substance.
  6. Besides these regulations, it must require either difficultly obtainable apparatus and instruments for its preparation, or particular manipulation obtained only by long experience.
  7. In reference to advertising it in the daily papers, leave has to be obtained from the newspaper censor.
  8. All the cost of carriage, and other expenses connected with the remedy must be defrayed by the sender.
- Very few English patent medicines are in use in Russia (they are mostly French). The names and wholesale prices of some of them are:—

\* St. Petersburg has about sixty apothecaries' shops, and about 10,000 or 12,000 inhabitants are considered necessary to support one shop. Besides these private shops, there is in each hospital an apothecary (*Kasimov Apteki*), who is under the authority of the Minister of the Interior, and gets his pay and rank from him. Foreigners who have passed the pharmaceutical examination in Russia may get Government situations, but have no claim to any rank unless they become Russian subjects.

† In St. Petersburg, at the Medico-chirurgic Academy, the law has come into force that no assistant can study for a "provisor" unless he can show that he possesses the certificate of a full gymnasial course. On that account, for the last two years, no assistants from the interior come to St. Petersburg, but they still go to Dorpat, Moscow, Kiev, etc.

Henry's Calcined Magnesia, 1 rbl. 10 cop.\*  
 Juniper's Essence of Peppermint, per bottle 25 cop.  
 Moxon's Magnesia, per bottle 1 rbl. 30 cop.  
 Oxley's Essence of Ginger, per bottle 1 rbl. 50 cop.  
 Sandwell's Issue Plaster, per box 40 cop.  
 Seidlitz Powders, Butler's, per bottle 1 rbl. 30 cop.  
 Seidlitz Powders, Savory and Moore's, per box 1r. 30 cop.  
 Sterry's Poor Man's Plasters,  $\frac{1}{2}$  gross, 3 rbl. 40 cop.

# PRESCRIPTIONS FOR EXAMINATION, LIBRARY OF REFERENCE, AND PROVINCIAL ASSOCIATIONS.

BY JOSEPH INCE.

THE entire collection both for London and the country is finished. Fifteen volumes are in the hands of the London Board of Examiners, and the remaining fifteen have been distributed elsewhere. The book for Hull has been despatched, and four additional volumes have been sent to Edinburgh. The last contributors are as follows, and with them the list is closed:—

1. E. B. Vizer, Lupus-street, Pimlico.
2. Robert Howden, Gracechurch-street, City.
3. H. G. Mumbray, Higher Broughton, Manchester.
4. W. Wilkinson, Cheetham Hill, Manchester.
5. T. Buck, Chelmsford.
6. Thomas Padwick, Redhill.
7. J. White, Glasgow.
8. E. B. Vizer (something admirable).
9. R. Brodie, Glasgow.
10. A. Macintosh, Montague-street, Rothesay.
11. Mr. McKill, Hamilton.
12. Many thanks to Alexander Kinninmont, and to all and sundry—thanks.

## A REFORM NOT WANTED.

IN his recent inaugural address at the Pharmaceutical Society, Mr. Mackay ventilated an idea which has lately crept into the councils at Bloomsbury-square, and which, we believe, has won the heads and hearts of many of the magnates there. In an implied manner he advocated the separation of the educational from the examining functions of the Society, or in plainer language, suggested the desirability of an abdication on the part of the Pharmaceutical Society of that system of instruction which it has carried out so perseveringly and so thoroughly. "Be it remembered," said Mr. Mackay, "we are now recognised by Government as an examining body, and it is *certainly not unreasonable we should cease to be an educating one also.*" In the name of common sense, why? Has Mr. Mackay ever heard of Edinburgh? And does he know that there exists there a famous University "recognised by Government as an examining body," which is still a very efficient educating body also, and sees no shame in it? There are several other little places in other parts of the world where the same combination of supposed incompatible functions are most splendidly carried on. It is just possible that such a course as Mr. Mackay suggests may be called for in the future. We see no reason to expect it, but in any case no one will affirm that any grievance exists at present. There is needed some central institution which shall be the recognised fountain of pharmaceutical knowledge. Branching from this there should be many streams extending into

the provinces; and we ask whether that consummation would be so likely to be reached, if it depended on an establishment whose main object should be to succeed itself, or on the will of a Society comprehending members all over the country. An independent college could hardly have all the opportunities enjoyed by the institution to which the Government has delegated the management of pharmacy in this country; and surely any improvement which may be considered possible for the college might be introduced now. But suppose the cause of pharmacy did not suffer by this divorce in an educational sense, what practical advantage would be gained by the innovation? Simply, as far as we can see, an increase of expense occasioned by the conduct of two establishments instead of one, which expense would ultimately, in one form or another, fall upon the students. There is no advantage in perpetual change *per se*. The Reformer, who lives for commotion of any kind, is as likely to be mischievous as the Conservative, whose only anchor is "Auld lang syne," is likely to be stupid. We by no means designate Mr. Mackay as a hare-brained reformer. But when a change like this is suggested, we should like to hear something more than a mere fancy as its justification. The chief aim of the Pharmaceutical Society has always been to train up a race of accomplished pharmacutists. The trust lately committed to it by Government is, or should be, regarded as incidental. Pharmaceutical education should still be considered, as it always has been, the chief object of its existence. The example of the College of Surgeons may be very good under its own circumstances, but it is not necessary that we should follow exactly their precedents. The University of Oxford trains students, examines them, and grants them degrees. This is exactly what the Pharmaceutical Society now does on a very much smaller scale, and we are at a loss to know what there is wrong about it.

## ADDRESS TO PHARMACEUTICAL STUDENTS.

October 4, 1871.

BY MR. JOHN MACKAY, EDINBURGH.

THREE years ago a new feature was introduced in connection with the opening of the winter session in this school, so long and so successfully carried on, by the delivery of a few words of encouragement and advice to the young men about to commence their studies in pharmacy, chemistry, and botany. Let me remark how singularly happy the idea was to invite the company of ladies on such an occasion, and how much the pleasure of all is enhanced by the presence of those fair friends who so kindly honour us by being now present. The plan thus inaugurated, after fair and repeated trials, has been pronounced a success. Nor can this be wondered at, for what is more pleasing to the youth about to buckle on his armour, than to hear and to know that many, whose names must indeed be familiar as household words, meet together, and by their presence on such an occasion prove that they still possess the deepest interest in the educational advancement and mental improvement of those who desire to make pharmacy their daily work and profession?

In connection with this movement, three gentlemen have already had the pleasure of addressing the pupils on similar occasions to the present; and I know there are many now hearing me who can testify to the ability and care with which they have so admirably fulfilled the trust committed to them.

Now it is this very fact which places me so awkwardly. I do not intend to analyse or characterize the nature or conclusions of the addresses which have preceded this one; but I feel constrained under the circumstances, and specially referring to these productions of the past, to say for myself how extremely difficult I find it to follow those who have on former occasions so ably taken their place at this desk. I feel conscious that it is not an easy thing to stand on the

Russian money in English value:—		£	s.	d.
6 Roubles,	28-640 copecks	=	1	0 0
1    "    "	45-000       "	=	0	5 0
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0    "    "	20-018       "	=	0	1 0
0    "    "	2-418       "	=	0	0 1
One Rouble has 100 copecks.				

same platform with the educated and scientific gentleman, from whose lips I heard, three years ago, a paper from the very appropriate motto "Thorough." Or, again, I would with all seriousness ask, is it not enough to make the boldest man falter when requested to follow in the wake of the eloquent, sensible, and practical remarks of our venerable and venerated fellow-worker, Henry Deane? while it might appear an equally vain thing to imitate the poetic style of such an address as some of us heard a year ago within the walls of this very house. And yet, with all this, the feeling steals over me that, many years ago, obedience was so strongly inculcated that, when called upon by the Council of your Society to make my appearance before you this evening, I felt that it was my duty to come and undertake the task, with the strong impression that the honour conferred by the invitation was not a slight one, and that, while I might fail to express in such graceful language or impart to what I might say the brightness and happiness which, like a golden thread, did so much to clothe, connect, and enliven the brilliancy of the papers of those who had already addressed you, I could, at all events, as plainly, faithfully, and sincerely wish the young students now before me God speed in their pursuits, and a successful and prosperous termination to their studies.

I honestly pity the man, be his age what it may, who has become so insensate and indifferent that he cannot now and then in some respects be a youth again. When memory fails to carry back to that early period when the world, with all its joys, sorrows, and cares, was practically unknown—when the youthful mind revelled in the anticipations of a future career, when the whole horizon of dawning hopes and fears was lighted up with the day-dream of happiness and success—I say, when a man shuts his memory to such reminiscences, I feel he is in one sense to be pitied. Standing where I now do, I feel irresistibly carried back a few years, and I would be untrue to myself as well as to you did I not say so.

I can conceive of no one, having lived for half a century, who has not during that period forged and encircled himself by a chain of association which he would be unfair to himself and to others were he deliberately to break in pieces and cast aside, as if its component parts were only worthless material. I admit that throughout life's journey, with all the mutation which is not only a close but an inseparable companion, such a chain could not long exist unbroken, without here and there giving evidence of a shattered link; and it is while I now address you that such a flood of remembrance comes strong upon me, reminding me of a peculiarly bright link in such a chain of association, which, to speak for a moment paradoxically, is in one sense truly broken, but in another as certainly not destroyed. I feel that I cannot stand before such an assemblage, in the house and within the walls of the Pharmaceutical Society, without, at the very outset of these few remarks, adverting to him through whose noble disinterestedness, untiring energy, and vast intellectual power, our very Society, of which we are so justly proud, was founded, nourished, and extended. Need I say I refer to the late Jacob Bell?

I feel that it is almost unnecessary for me to ask you to bear with me while in a single sentence or two I recall the time when, side by side with him who but a few years ago passed from among us, I followed my daily walk and occupation—that period of my life on which I often love to dwell and linger, and which, while the heart throbs, will ever continue to be a bright-green and ever-to-be-remembered spot in my memory. It may be a story often told, and yet I cannot resist saying, especially to my young friends now present, that Jacob Bell was no ordinary man. With a mental capacity few possessed, a grasp of intellect rarely found, love for his neighbour which nothing could quench, a firmness of purpose at once irresistible, devoted to the Herculean and apparently hopeless task of raising our profession, an amiability as conspicuous as it was untiring, in manner and conversation suited to grace any society, Jacob Bell stood forward as the champion of all connected with pharmacy, and has thus earned for his memory the unfailing and never-ending gratitude of the pharmaceutical body. I offer no apology for thus referring to our departed friend, for although the very facts I have named of his varied mental acquirements render it vain to expect that in the present generation we will ever see his

equal, yet as it is the testimony of those who knew him best, that many years were spent, and life itself at last sacrificed, in his longing desire to benefit those around him, I do sincerely hope that such a good example may not be entirely lost, and that, unlike the morning cloud or early dew, which so soon pass away, the results of his labours may long remain and ever be remembered. For myself I can conscientiously express the hope, that I may never live to see the day when the honoured and loved name of Jacob Bell will be otherwise than gratefully and affectionately remembered in such a meeting as the present.

It has been affirmed that real knowledge is difficult to attain, and yet that, to many in the pursuit of it, the subject assumes three aspects or distinct phases. At the very outset the young and eager student thinks all so easy as almost to be within his grasp; or, at all events, at the very threshold of investigation, the atmosphere appears so clear and bright that the path he has to travel can scarcely be mistaken, and to his mental vision easy and soon to be traversed. Soon, however, comes the next stage, when, having fairly grappled with the first difficulty, he finds he knows comparatively nothing; and with such a feeling, accompanied by a noble and determined effort to acquire the desired and necessary information to fit him for his future career, comes the third condition or phase, that of perfect conception and rapid acquisition of the real knowledge sought for.

Many who have prosecuted study and research will admit that, in many cases, there is considerable truth in this statement, while the description may be looked upon by others as fanciful and figurative; yet it cannot be denied that in no profession is such a state of gradual advancement so apparent as in our own. To many the first step in chemistry and pharmacy seems simple and easy, and yet how rapidly comes the time when the peculiarities and depths of the sciences require our closest attention and study, before we can comprehend either their marvels, harmonies, or truths! It is, indeed, correct when we say there is no royal road to knowledge, and we who are pharmacists form no exception to this unvarying rule. Let me, then, in view of this fact, impress upon you all the value of time. During no period of life is it more difficult to realise this than in youth. I know that five minutes or half an hour spent in a light frivolous manner is thought nothing of by many a young student. I know well that fatigue will often plead, and that powerfully, for rest and amusement; but I go further, and say, relaxation is not only useful, but a necessity. What I ask for is not the abuse, but the use, of spare minutes and hours. As Martin Tupper has it,—

"If the mind is wearied by study, or the body worn with sickness,  
It is well to lie fallow for a while, in the vacancy of sheer amusement;  
But when thou prosperest in health, and thine intellect can soar untired,  
To seek uninteresting pleasure is to slumber on the couch of indolence."

The real life of every pharmacist may be said to be divided into two stages or divisions. The first can be recognized as the period during which a young man ought to learn and acquire a solid foundation on which to depend for his future success; while the other may be said to embrace the more extended period during which he will be called upon to exercise or apply the information gained by study and application to the circumstances of his position, and thus turn to some useful account the study of past years. No young student ought, therefore, ever to forget—

"This above all, to thine ownself be true,  
And it must follow, as night the day,  
Thou canst not then be false to any man."

Above all, be true each one to himself in this respect, that he feels and acts as if he knew, that it is essentially necessary to keep up the stock of knowledge already gained by the maintenance, more or less, of habits of investigation and study; for at the present time it is impossible for anyone to take his true position as an educated pharmacist, unless he diligently keeps himself abreast in all that pertains to pharmaceutical chemistry. I know that in making this statement I lay myself open to the remark, that in many cases the opportunities for self-improvement are so few, and the means of cultivating the scientific department of our business so meagre, that it is almost impossible to evoke from odd minutes or even hours such results as those at

which I have hinted. But to meet such a feeling, may I not refer to cases where the most brilliant talent has, after being clouded and hid amidst difficulties and struggles, emerged and shone with dazzling lustre in the horizon of science. It has been surmised that Sir Humphrey Davy would never have been the great philosopher he became had he been favoured with extensive privileges in his early career, and that the discipline through which he was compelled to pass, owing to his comparative poverty, developed the perseverance and energy so necessary in his future researches to raise him to a pinnacle of fame few in the world ever reached. But to go a step further, it is known that the late Professor Faraday, pupil and successor to the illustrious Davy, being of very humble parentage, was, at the early age of thirteen, apprenticed to a bookbinder, and while following this his intended occupation, was found one day reading an article on electricity in a volume of the "Encyclopædia Britannica," which had been sent to be bound. The gentleman to whom the book belonged, on making this discovery, was so much struck, that he presented Faraday with a ticket to attend Davy's lectures at the Royal Institution, soon after which he was admitted to a place in the philosopher's laboratory, and reached, as you all know, long before his death, a world-wide renown and reputation.

Of these two great men it has been said, "Both were greater because of their first difficulties; but they were greater because they had the mental constitution which required such difficulties to brace their power. Had they been originally men of ordinary mental gifts, they would have remained until death in their original obscurity. Had they, in common with their great mental endowments, possessed unlimited facilities, they might never have passed the bounds of a respectable mediocrity."

I cannot, therefore, impress too strongly upon all the great importance of a just appreciation of the value of time. Every man is apt to waste or mispend time; and we know, if once lost, it can never be regained. We can measure its flight, but we cannot, for a single moment, arrest its onward progress; onward, onward, since the world began; and on, unceasingly on, until the period when time itself shall be no more. The child of yesterday becomes the man of to-day; and if such be the unceasing and rapid flight of time, it certainly becomes all-important to economize and use the precious and never-to-be-recalled minutes ere they flit for ever away. Well has Marsden put it when he says—

"What is time?"

I asked an aged man,—a man of cares,  
Wrinkled and curved, and white with hoary hairs.  
'Time is the warp of life,' he said: 'O tell  
The young, the fair, the gay, to weave it well.'

I know it is not an easy thing for the youthful mind to realize, in all its fulness, the value of time. There are so many allurements, so many whisperings, and so many attractions, that the mind is frequently insensibly led away, until, when the opportunity is over and the day far spent, regret and disquiet creep in, where all might have been peace and satisfaction. How often in mental review does the man of riper years wander back to time which has passed like a vision, and with such remembrances find what might have been otherwise a pleasing picture, so blurred and defaced, that pain, humiliation, and vexation, are all the more intensified from the few bright and beautiful spots which, like "apples of gold in a picture of silver," may be seen struggling through the gloom, carrying the conviction that many opportunities had been lost which might have been turned to useful account, but now gone for ever!

I make these statements very plainly and boldly, because I believe I am right in believing that there is no one now hearing me, for whom these remarks are specially intended, who has not a brief space of unoccupied time more or less on his hands; and I wish to draw the particular attention of all such to the full value of spare minutes, and to inculcate the amount of good to be done by a methodical and systematic arrangement of the short half-hour in the morning, evening, after meals, or, indeed, at any time of the day or night. I have a very pleasing recollection of what could be done in our own business at a period when hours of attendance were very much longer than at present. During my residence in 338, Oxford-street, not one minute was lost at breakfast, dinner, or tea. Each young man had his book on the table;

while the evenings after 10, or even 11 o'clock, were devoted to reading and study. More than myself are now alive to testify to the good results arising from such organization; and few things afford me greater pleasure than in recognizing, while I now address you, a living witness of the truth of what I have just stated, in the person of my old, tried, and valued friend, Mr. Hills, in himself a type of all that is good, generous, and amiable; and who, I am proud to say, was my fellow-companion during the whole time I was in Mr. Bell's establishment.

With a view to impress still further upon my young friends the inestimable value of time, I cannot resist introducing a picture which I feel assured will interest all, namely, a glance at the early years of the life of an eminent and excellent man; who, while in this world, so measured and arranged his time, that he greatly advanced the temporal and spiritual good of many of his fellow-creatures, and whose life and actions we may well strive not only to admire, but in many respects, to imitate.

About ninety years ago there lived in Spitalfields a silk manufacturer. I must ask you, in imagination, to accompany me to his mansion, and wending our way upstairs into a boy's apartment, there find an inmate in the form of a youth about fourteen years old. This young boy is not idle; he has evidently head and hands employed. He is endeavouring to make some tubular instrument, the materials employed being card-board and glass. He is trying to make a telescope. Money to purchase one, or even better materials with which to attempt its construction, were not within his reach; but yet a telescope he must have. Accordingly, he may have paid one shilling for glass and twopence for pasteboard, and with these he is busy at work. He proceeds without intermission, and when night has canopied the restless city and stilled its noonday roar into a murmur, and when its countless stars are keeping watch over the homes of men, you will see our young friend has succeeded; there, at his open window, he may be seen with his recently and economically made instrument pointed heavenward, his young eye, as sleepless as the objects to which his gaze is so earnestly directed, seems fixed to the other end, when, suddenly springing from the window, he exclaims, in perfect ecstasy, "I see them! I see them!" He had thus early discovered the movements of Jupiter. A glance round the room showed abundance of chemical as well as astronomical proclivities; and although it was his father's strong desire to bind him among the silken meshes of his own occupation, he became one of our most celebrated chemists, devoting his life not only to the varied pursuits of science, but also in a persistent endeavour to benefit the temporal and spiritual condition of his fellow-creatures. And who do you imagine this loving, able, and talented man was? No other than the first President of our Society, the gentle, amiable, kind, and good man, William Allen. Need I tell that the boy I have described became the founder of a philosophical society?—lecturer at one of the hospitals in the metropolis—the intimate friend of Sir Astley Cooper—the companion of the well-known Humphrey Davy—associated with Dr. Jenner in his great discovery—and aiding and assisting not a little the celebrated Wilberforce in abolishing the slave trade.

All honour to this noble man's example, whose labours for the benefit and amelioration of his fellow-creatures were such as to carry his name and reputation far beyond the shores of his native country, and whose memory is yet honoured by many at home and abroad who have been privileged to know the time he spent, and the success which attended his unceasing and earnest efforts for the benefit of mankind.

So much for the unselfish life of a pharmacist, of, I am proud to say, one of ourselves, whose career, at once so brilliant and so remarkable, may well stand out as a beacon-light to warn from idleness and inattention, and, at the same time act as an inducement to make such use of time and talents, to the extent we are able, that a review of days and years passed away may give—mingled, it may be, with some regret—a feeling that our whole existence has not passed without more than one effort on our part to improve, both to ourselves and others, the opportunities afforded us. True, every one cannot be Jacob Bells or William Allens, for

"All are not born  
To touch majestic eminence and shine."

But I beg you to remember that no man living, and particularly no one connected with us in our daily walk, can fail, if he is so disposed, to improve himself, and benefit, in some degree, those around him. Though no single individual can unaided rear a structure, still many a stone may be placed in position, and thus assist, in some measure, the building up of what may be looked upon with satisfaction. I am one of those who believe we all have our mission, and that our duty, in whatever sphere we may be placed, is to do our best; and thus acting, we are told "Angels can no more;" while such exertions will, and ought, to carry with them a feeling of happiness and comfort.

Throughout your student life, then, avoid being selfish. Do not live entirely to yourselves, or simply for your own gratification or pleasure,—and allow me to add, that in emerging from the life of a student, let the man be as determined as the boy, not to live to himself, but view opportunities given for being of service to others, as great and high privileges which he can never over-estimate or value too highly. I do trust that in making these statements I am not misunderstood. I am a believer in what has been often quoted, "to know that before us lies in daily life is the prime wisdom," and I therefore do not in the least degree argue inattention to daily engagements and other claims, which every man in business must know and feel to be imperative; but as you mix in the world you will find human nature often difficult to understand or comprehend, and witness its inner promptings sometimes issue in anything but a pleasing aspect; and although it may be a comparatively rare thing for you to fall in with self-sacrificing individuals, yet trust me when I tell you, that as you journey on through life, and as year after year flits away, like milestones along the highway, reminding that though slowly you are surely treading the path which must at last end your journey, there can be no more pleasing or agreeable thought than the consciousness of having contributed, when opportunity offered, to the instruction, relief, or comfort of neighbour or friend.

I know much has been said and written, and that a strong feeling exists in the youthful mind in regard to a subject to which time will only permit me to glance, namely, early closing. I have always been, and still am, an advocate for this whenever it can be accomplished. It is undeniable that late hours in our business are in many instances the result of bad habits, and we know how difficult these are to eradicate. The aspect of many things has changed of late years, and in many towns and numerous districts, the general public have become educated to a change in this bad custom, and therefore many dispensing establishments now close at eight o'clock instead of keeping open until a much later hour. Indeed, although there may be, and are, many exceptions, still I believe that with the chemist and druggist the iron age of late hours and slavish attention to business is rapidly passing, and that we are gradually approaching the golden age of pharmaceutical position. I would, however, say to all young men now present, that there may be particular districts, and very special reasons for some places of business keeping open till a late hour in the evening, and where, from a calm and dispassionate view of these circumstances, it is found to be a necessity, there should not be the expressions of disappointment, irritation, and vexation which I know are now and then pretty forcibly expressed, but rather let there be an attempt made by constitutional means to bring about, if possible, a better state of things. I confess it is almost ludicrous to find that if from accidental circumstances, such as stock-taking, painting, etc., a druggist's shop chances to be kept open unusually late, you are certain to have parties coming in for certainly not very urgent medicine, but simply because the door was observed open, or the light visible. Sudden recollection coming then upon them, the most ordinary household medicine became an immediate necessity. Now this is not as it ought to be; and no one will be more satisfied than I will be, to know, that throughout the length and breadth of the land, dispensing chemists follow the good example of many of their brethren, and shut at such an hour in the evening as will allow the young man to retire to his room for study, or to take some recreation, or, what is better still, a portion of both.

A word or two as to your position here as students of this school. Many young men in the provinces have a feeling of disappointment and jealousy as to the great advantages

which those who reside in London or neighbourhood find in Bloomsbury-square. I admit at once there is at first sight some foundation for such a feeling, for comparatively few can come from a distance to study in London. But I cannot help thinking that ere long this Society will cease to be an educating body. No one need start or look amazed under the impression that I am about to consign your able and eloquent professors and teachers to oblivion. My intention is very far from that, for I say all honour to those distinguished and tried men who have done so much for the existing race of pharmacutists, and whose successful labours may yet, I hope, extend through many succeeding years. But be it remembered, we are now recognized by Government as an examining body, and it is certainly not unreasonable we should cease to be an educating one also. I fancy therefore that ere long the Society will neither appoint nor pay professors. Already it is understood that a young man may obtain the knowledge required to enable him to become associate or member in any way he pleases; and so, in like manner, I look forward to the time, not far distant, when in London or in the provinces, young men will attend lectures, as well as practical chemistry, without being taken under the wing of the Society; and thus that the existing course of study in the Square will be succeeded by lectures and lecturers more in accordance with an established college of pharmacy. I admit at once that a centre must exist somewhere, and for many reasons there is no place so well fitted for this as the metropolis. Never forget, however, that by study and application, pharmacy and its kindred subjects are capable of being learned and comprehended in the country village as well as in the crowded town; and if not quite so easily and readily acquired, as when guided by eminent teachers, the merit of accomplishing the arduous task is all the greater, when in the absence of such opportunities a position can be gained in London or elsewhere.

It is neither the time nor the place to refer to the troubled waters of pharmaceutical legislation, nor will I make any remark as to the surging waves of fear and anxiety which have of late passed over the horizon of poison regulations and responsibilities; but I may remark, that in any approach we may make to Government, the keynote of our advanced position and recognition is so loudly sounded, that the eye of the general public turns more observantly than ever on our movements, and it therefore becomes us all to proceed with the greatest circumspection in all that pertains to the carrying out of existing Acts of Parliament; and while there are many good men and true standing in the breach, succeeding generations look to those who, like many now before me, will gradually but surely follow in the footsteps of those to whom they at present look up as their seniors. Again, then, let me urge upon you application and study. Never be discouraged with any difficulty. Ever remember there is much in these two short simple words, "Try again;" for I know no feeling more pleasant to a young man than that of a sense of victory after more than one hard struggle to overcome what had appeared not only difficult, but almost insurmountable.

In conclusion, let me remind you that in connection with the varied course of study upon which you are about to enter, the science of chemistry very specially presents a wide and extensive field from which to cull many interesting facts. I feel that I have lived long enough to know that the comparatively finished chemist of to-day may become the humble and eager student of to-morrow; for amidst the more than giant strides with which chemical science has been, and is still advancing, it takes a great amount of labour, skill, and research to follow in the path of chemical investigation. What, may I ask, can be said of that science which, while it includes more or less the whole range of sublunary things, starts through the immensity of space, bringing you into acquaintance with the very materials of which the planetary system itself consists? Nay, invades the light of the sun, and tells that in the rays of the luminous orb of day there are found materials and compounds not only in great variety, but rivalling in value the diamond itself, thus giving unmistakable proof that far away in the twinkling star, or soft silvery moon, and in the bright blazing sun, we have chemical elements, in varied combinations, playing important parts, and giving rise to a wonderful and harmonious whole! Need I refer to spectrum analysis, elec-

tricity, dialysis, and kindred discoveries, as assisting to open the mysterious and hitherto unopened marvels and wonders of creation? While, however, surprise and amazement may be excited, let us never forget, that amidst the endless and never-wearying changes going on, the most minute, as well as the most stupendous work in the heavens above, or on the earth beneath, whether indeed it be the falling of the sparrow to the ground, clothing the flower in all its gorgeous beauty, raising the gigantic tree of the forest, governing the stormy wind or wild ocean wave, supplying the germ of vitality to the most tiny form of animal or vegetable life, supporting the daily if not the momentary wants of all existing things, is yet the ever kind, loving, and beneficent Creator, who "has measured the waters in the hollow of His hand, meted out the heavens with the span, comprehended the dust of the earth in a measure, weighed the mountains in scales, and the hills in a balance, and who taketh up the isles as a very little thing."

#### SHALL WE THROW PHYSIC TO THE DOGS?

AN elaborate consideration of this question appears in *Lippincott's Magazine* (Philadelphia, U.S.), for September, from the pen of E. P. Buffet. We quote the greater part of the article, as the discussion cannot fail to interest chemists and druggists:—

"Solomon says, 'A merry heart doeth good like a medicine.' The inference is unmistakeable. The wise monarch thought that 'a medicine' does good. Probably Solomon supposed he had sufficient grounds for such a conviction. He had a large family, and as he was not in the habit of sparing the rod, very likely he succeeded in persuading some of the juvenile members to swallow certain unpalatable doses which he thought necessary for their health; and very likely he then thought he observed good results from the administration. It is not improbable that the Jewish king, having retired for the night, after some sultry summer day, with every window of the royal palace widely open, to catch the faintest zephyr, had been aroused in the small hours to find that the chilly northern blasts from the hills about Jerusalem were driving in at the open casement, and that the infant Rehoboam, from his trundle-bed, long before the matutinal hour, was vigorously crowing with spasmodic croup. No doubt then, as would be the case at the present day, the door-bell of the family physician was energetically rung, and the future hope of Israel was duly plied with ipecac., hive-syrup, blisters, and sinapisms. The boy surviving the treatment, the father then, as parents do now, would for ever afterwards triumphantly point to the white-headed urchin as a living monument, to prove both the skill of the family physician and the value of hive-syrup and ipecac. Doubtless, under some inspiration of this kind, Solomon assumed that there could be no question that medicine does good.

"We make no pretension to any greater wisdom than Solomon on general subjects, but we do think that if he were living at the present day he would very carefully reconsider the proverb we have quoted. He undoubtedly had a family physician who was a regular practitioner, who frowned upon all patent medicines, who had never learned the value of infinitesimals, and who treated his patients in the original heroic style. Solomon probably believed that the medicines prescribed by his physician were orthodox, and that all others were heathenish and abominable. How would it have puzzled the wise man to have found, as we do at the present day, that not only the regular system of practice is successful, but that many other systems entirely at variance with it appear to be equally so! How would it have astonished the king to learn that his wisest and wealthiest senators and prophets were using, with immense satisfaction and apparent success, Indian vegetable pills, and the water-cure, and the movemont cure, and the extract of buchu, in ailments of every character and variety! How his temper would have been ruffled if the Queen of Sheba, on her visit, had pronounced his family physician a humbug, and urged his dismissal, while she offered as a present various minute bottles of infinitesimal pilules, with glowing descriptions of their charming effect upon herself and the

ladies and children of her court. But Solomon, after carefully considering the facts, would probably have drawn the inference, from the great variety of medical treatment around him, either that everything which claims to be a medicine, no matter how unskilfully applied, is just as effectual as the carefully-prescribed doses of the court physicians, or that all medicines are alike ineffective, and do but little good. And the new thought might gradually have dawned upon his mind that Nature or some inherent agency would just as certainly, if not as speedily, have cured the infant Rehoboam, without the aid of the officinal emetic, cathartic, or sinapism.

"Without professing to be able to demonstrate the fact mathematically, we assert that the effect of medicine—by which we mean drugs simply—long has been, and still is, greatly over-estimated. We believe that the experience of every well-educated, observing physician will justify the assertion that in more than three-fourths of the diseases which are treated, medicines, if they do any good at all, are merely non-essential adjuvants in the recovery of the patient—that it is doubtful whether the lists of mortality would be materially swelled if the physician should ignore all so-called curative drugs, providing he used the same means to sustain and strengthen his patients, and to secure the observance of the rules of hygiene. We believe that many a physician alights at the door of some aristocratic mansion, feels the pulse of his patient, looks at his tongue, prescribes with all due gravity and formality, receives his fee, and grandly drives away, knowing all the while that the patient needs nothing but fresh air and exercise; leaving, nevertheless, in the mind of the patient the impression that the doctor's services are essential, but carrying in his own mind the sneaking conviction that he himself is but little better than a humbug. The physician may do this without any intention to practise dishonesty or gain undeserved applause, from the simple habit, so easily formed, of yielding to the mistaken popular prejudice, that drugs are an essential in the treatment of every disease.

"Nothing is more probable or natural than that we should over-estimate the virtue of medicine. We do it because we wish to do it. We all expect to be sick, and we wish to believe that when we become so we can be cured. Many of us will indulge in violations of the known laws of health, and we wish to believe that the punishment for such violations can be averted. We all wish to have faith in the skill of our physician, and will pardon a great amount of assumption of authority and wisdom on his part. It never excites our jealousy to hear him extravagantly praised. We like to see him sport a fine turn-out, and often make him a pet in our households. We will not harbour the suspicion that he is capable of a mistake, or that his judgment can be at fault. Some, it is true, in health profess to believe the doctor a humbug, but when sickness comes the most swaggering heretic is suddenly converted, summons the physician, and swallows the nauseous potion with all the alacrity of the life-long believer. Then it happens, in a medical point of view, that

'When the devil gets sick, the devil a monk will be,'

although it is equally true that

'When the devil gets well, the devil a monk is he.'

"The physician very naturally, too, allows his powers and the virtue of his drugs to be over-estimated, because it is flattering to his vanity, and he soon begins to accept the undue appreciation of himself and his medicines as really deserved. Thus it happens that the selfishness of the patient and the selfishness of the physician alike tend to produce an extravagant estimate of the necessity and virtue of medication.

"When a drug is found to produce any peculiar effect upon the system, no matter what the effect may be, it is generally adopted and christened as a medicine. If some chemical compound, or the root or bark of some tree, or the berry of some plant is found when swallowed by a man or a beast to put him to sleep, or to make him dizzy, or to give him pain, it is immediately supposed to be in some way or other good as a medicine. The number of such articles in the Pharmacopœia is wonderful to behold. Like the dogs who have been induced to swallow them for the sake of experiment, most of them have had their day, but still they remain. Some few of them undoubtedly do check the course

of disease, and hasten recovery; a much greater number comfort the patient and alleviate suffering; but there is reason to think that the virtues which the few possess have been unfairly ascribed to the thousands of others which are known merely to produce an effect of some kind upon the system.

"The very mystery attached to the action of drugs itself increases the probability that their effects will be over-estimated. We are inclined to exaggerate what we cannot fairly comprehend. Disease itself is mysterious. It is strange that a breath of infected atmosphere can produce the horrible small-pox; it is singular that an intermittent fever should return at stated intervals with such marvellous precision. So are the effects of drugs mysterious. It is odd that quinine should prevent a paroxysm of intermittent fever with any more certainty than the same amount of sugar. The very mystery associated with the action of the drugs that cure leads to the hope that other drugs whose action is likewise mysterious, may also effect cures. Strychnine, in whose chemical composition there is nothing peculiar, when placed in a small quantity upon the tongue, produces immediate convulsions and death. No one can tell why such a result should occur; it could not have been predicated before the experiment by any process of reasoning. As this effect is marvellous and inexplicable, and as diseases are often just as much so, the popular tendency seems to be to associate the two, and to hope that by some process just as mysterious the drug may produce an effect upon the system, destroying and eradicating disease. In other words, it is hoped that because it can kill, it can also cure.

"There is a principle of life in all animals and plants, whose tendency is to restore when disease invades. It has been called the *vis medicatrix naturæ*. If the limb of a plant is injured or broken, this principle tends to restore or replace the lost member, and unless the injury has been immediately fatal, it accomplishes its object. There is the same tendency to recovery in diseases; and in most cases the recovery will take place without external aid, as we should discover if we would withhold medicines long enough to permit the experiment. Medical text-books now recognise this fact more generally than they did a few years ago. We find that the number of 'self-limiting' diseases is greater in proportion than formerly. In civilized countries we can seldom determine what Nature can accomplish for herself, so eager are all to assist or supersede her efforts by medicine. Among savages we see what she can do alone, and we find that she does her work well. The Esquimaux, whose pharmacopœia is exceedingly scanty, will contrive to recover from their various ills and reach a longevity equal to that of their more civilized neighbours. If to drugs, and not to Nature, is to be given the credit of healing disease, then where drugs are the most constantly and scientifically prescribed there should be the least sickness, the most speedy recovery, the most stalwart frames, and the longest lives. In wealthy cities, where the science of medicine is supposed to have reached its greatest perfection, there should be found men and women of muscle and endurance, while in the forest, where Nature is allowed to practise the healing art, we should expect to find puny, pale-faced, cadaveric, so-called intellectual-looking men and women, suffering from all the different grades of nervous debility. The opposite is true. The Indian, whose only medicine for every ailment is his decoction of herbs, the Patagonian, who probably never heard of medicine, has better health, can endure more hardship, and will live longer than his civilized neighbour who has hourly access to the multitudinous gilt labels of a Helmbold or a Hogeman.

"If medicines are as effective as has been popularly supposed, we should naturally expect to find a great difference in the results of the practice of skilful and unskilful physicians. The man of superior intellect would take the same rank as physician, in the popular estimation, when compared with his less talented associates, as he would take in the professions of law or theology. This, however, is not the case. It is true that the highly scientific physician cannot fail to be recognised as such, but the fact will not be brought to light by his success in the practice of his profession. We have a right to assume that the acquisition of a large and flourishing practice by any physician is an evidence that his patients are as successfully treated as at least the average. Now, we should expect that the skill in

the treatment of disease shown by the highly-educated physician would be so manifestly superior to that of one less thoroughly educated, that the extent of his practice would correspond with the excellence of his attainments. Such, however, is not the fact. We find that in the practice of medicine, more than in any other profession, the success of the physician in acquiring practice depends not so much upon his superior education as upon his pleasing address, his portly and imposing form, and his skill in adapting the amount of 'palaver' to the receptive faculties of each particular patient. The scientific and highly-educated physician is recognised, it is true, but only as every other intelligent man is recognised—not by his superior success and skill in the administration of drugs. The fact that he is educated, and that for this reason he ought to be skilful, will perhaps increase his business, but not in the ratio we might expect. The most impudent and presuming charlatan will often acquire a practice which a modest physician with such attainments as would give him a front rank in any other profession will be unable to obtain. The most ignorant pill-maker will never lack for testimonials from clergymen and Congressmen certifying that his particular pill, whatever its composition may be, will cure diseases of the greatest variety and virulence; and his success is assured if he can only obtain the means to advertise his patent medicine. This could never be accomplished if there were a very perceptible difference between the success of the pill and some more scientific method of treatment. We argue from this fact no special virtue in the patent medicine, but an absence of it in the medicines more carefully prescribed. We argue from the success of the charlatan not the value of his drugs, but the worthlessness of many prescribed by the educated physician.

"The fact that even among scientific physicians such a variety of medicines is recommended in almost every disease, that such a complexity of combinations is prescribed, that often no well-defined plan of treatment is universally agreed upon, but that each physician selects and experiments for himself, and the fact that in spite of all this the result appears to be about the same, indicate that either all forms of treatment are alike successful, or that none accomplish the result, which is due to some other cause. The possibility that the latter hypothesis is the true one is increased when we remember that even in incurable diseases the number of medicines recommended is often great.

"The history of medicine for the last fifty years tells a tale either of great errors in the early practice of the period or of just as great in the present, or it shows that methods of practice professedly at variance can be alike successful. Not many years ago calomel was considered the indispensable drug in practice. The physician without calomel was the artilleryman without his ammunition, Samson shorn of his locks. The tongues that were swollen, the teeth that were loosened, the gums that were made tender, modern physicians say, will present a horrible array of testimony when doctors get their deserts for malpractice. But the men who believed the patient was nothing unless he was bilious—who believed that there was but one organ in the body, and that the liver, and that this was to be unlocked at stated intervals, and entered and swept and garnished with mercury—who believed that in at least half of the known diseases salivation and salvation were synonymous terms,—these men were Jenner and his contemporaries—men undoubtedly of careful observation, sound judgment, and great skill. For aught that we know, they were just as much respected by their patients, just as successful, as the modern Æsculapius who says that they were unmistakably and seriously in error. Patients recovered under their treatment, as patients recover under that of later physicians, who assume to possess the true Koran and be its only interpreters. Thirty years ago, a patient would be bled in disease where now it would be considered egregious malpractice, but the patient bled and the patient unbled alike recover or alike die.

"One fact in the history of medicine might well stagger the faith of the most confident believer in the virtue of drugs. It is the coexistence of two systems of practice, professedly antagonistic, each denouncing the other as absolutely ineffectual or positively harmful, yet both apparently flourishing, both having enthusiastic and intelligent advocates. At a time when human blood was flowing in

streams both large and small, not from the sword, but the lancet—when men believed that their temporal salvation depended on being scarified, cupped, leeches and vene-sected—an impudent Teuton, Hahnemann by name, broached the insane idea that patients could recover with less bloodshed, or even with none at all; and, strange to relate, they did so recover with unimpaired integuments, and, so far as human eyesight could determine, just as well unscarified as the reverse. At a time when no fact was better established in medicine than that in certain cases blisters must be applied to the shaven scalp and to the 'spine of the back,' and to the calves of the legs, this same German said to his tender-skinned followers, 'Do not blister,' and they persisted in recovering without blisters, but in direct violation of the orthodox rules of practice. Moreover, when hundreds and thousands were standing, hours at a time, spoon in hand, contemplating with rueful countenances the nauseous contents, and hesitating to make the dreaded plunge which should deposit the dose in its uncertain resting-place, the Hahnemann before mentioned was tickling the palates of his patients with sugar pellets, and facetiously insisting that they were taking medicine. Some of them believed him, and from some inexplicable cause would recover from their ailments quite as frequently as under the old *régime*. This wonderful burlesque on the practice which Solomon adopted, whether it has added anything useful to the Pharmacopœia or not, has at least added a horn to a dilemma. Either the ridiculously mild measures and small doses were useful and effective—which we must be pardoned for saying we do not for a moment believe—or the ridiculously large and filthy doses and severe treatment which had previously been in vogue were useless, which we just as firmly believe. The inference is a fair one, even if it has not been absolutely demonstrated, that the virtue of drugs and their efficacy in healing disease had been over-estimated, and that recoveries had been ascribed to the action of medicine which were due to an entirely different cause.

"Assuming that there is evidence that drugs have received more credit than they deserve, the serious question arises in the mind of the medical Othello, whether his occupation is not in a great measure gone. Not at all. It is to be feared, however, that he has mistaken, not his calling, but the nature of the duties required of him. Perhaps it would be well for him to consider himself a doctor, and not a physician—a teacher, and not a dispenser of drugs. It might be well for him to assume the rôle of directing not how to administer medicine, but how not to administer it. Let the educated physician give his attention to those manipulations in surgery and kindred arts where success is evident and certain. Let him educate his patients so that they will understand the laws of health, and not suppose that they can violate them with the expectation that the physician will be responsible if the punishment for so doing is not averted. Let him attend to the diagnosis of disease. This is a field in which a skilful physician can best distinguish himself from the army of quacks who surround him, and this is a branch of medicine in which such perfection has been attained as to place it high in the rank of sciences. If the intelligent physician believes that in three-fourths of the cases where medicine is prescribed the patient would recover under the same hygienic conditions as well without as with it, let him earn the gratitude of the invalid by telling him that such is the fact—that his disease is self-terminating, and that a fatal result is not to be apprehended. He would thus discourage deceit, relieve himself from the ignominy of failure which he might incur by prescribing where medicine is uncalled for, as it often is in cases necessarily fatal, and he would take away the prestige of success from those who can prescribe equally well with himself where the patient is sure of recovery; and in the comparatively few cases where the issue of the disease depends on the skilful selection of drugs, his real knowledge and the results of a careful training will be strikingly manifest.

"When the time arrives in which the physician will not prescribe until it is manifestly for the safety or comfort of his patient to do so—when he will not allow himself to be deceived or to deceive others—then medicine will take rank with surgery as one of the positive sciences; then the human stomach will no longer be a laboratory for the solution of chemical compounds, nor a confectioner's saloon for the

absorption of saccharine infinitesimals; and the grand army of sarsaparilla-hunters, Indian-vegetable-pill-makers, and buchuists, mourning over the returning reason of a community to which they have acted as vampires, will sadly turn to some respectable avocation."

## MEDICAL ASPECTS OF TOBACCO SMOKING.

(CONTRIBUTED TO THE *Food Journal* BY E. B. GRAY, M.D.)

"IS smoking injurious?" This is an everyday question apt to be put by patients to their doctors. Like most broad questions of the kind, it involves far too many considerations to admit of being answered by a plain yes or no. A medical man, who has long been a moderate smoker, and watched the effect of the habit on himself and others, here offers what he believes to be the true answer to the question.

First of all, there must be an understanding about the quality of the tobacco to be smoked. Bad, i.e., rank, quickly intoxicating, and prostrating tobacco (certain kinds of shag and cavendish, for instance) must always be injurious. Few can smoke them at all—none, habitually at least, with impunity. So too with regard to quantity, even good tobacco smoked to excess will to a certainty be injurious to the smoker, sooner or later, in some way or another. Of the various evil effects of excessive smoking more will be said presently.

Next, as to the smokers. There are people to whom any tobacco, however smoked, is simply poison, causing even in small doses vomiting, pallor, and alarming prostration. Such people never get seasoned to its effects, even after repeated trials; and if they are wise they will for ever let it alone. They will display still further wisdom by not presuming to make laws for others who have not the same idiosyncrasy.

No one can enjoy smoking, or smoke with impunity, when out of health. The phrase "out of health," though it may sound vague, is definite enough to frame a general rule. At the same time it is useful to know what, if any, are the particular disorders and conditions of health in which tobacco does special harm. As far as the writer's knowledge goes, these have never been specified by medical writers as clearly as is desirable.

To begin, a man with a bad appetite will, if he smoke, most assuredly eat still less—a noteworthy fact for smokers or others recovering from wasting illness or "off their feed" from whatever cause. This effect of tobacco, by the way, while an evil to the sick man who cannot eat enough, becomes a boon to the starved man who cannot get enough to eat; an ample illustration of this was furnished among the French and German soldiers in the recent war. Again, no man should smoke who has a dirty tongue, a bad taste in his mouth, or a weak or disordered digestion. In any such case he cannot relish his tobacco. It should be a golden rule with smokers, that the pipe or cigar which is not smoked with relish had better not be smoked at all. Indigestion in every shape is aggravated by smoking, but most especially that form of it commonly known as atonic, and accompanied with flatulence. Diarrhœa, as a rule, is made worse by smoking.

One of the commonest and earliest effects of excessive or untimely smoking is to make the nerves shake. This gives the clue to another class of persons who ought not to smoke—persons, namely, who have weak, unsteady nerves, and suffer from giddiness, confusion of sight, tremulous hands, tendency to stammer, or any such symptoms. And if tobacco does harm in mere functional weakness, still less allowable is it in actual organic disease of the nervous system; as for instance where there exists any degree of paralysis or other sign of degenerative change in the brain or spinal cord. The improper use of tobacco does beyond question somehow interfere with due nutrition of nerve substance. An illustration of this, familiar to oculists and medical men, is the so-called tobacco-amaurosis, a failure of vision occurring in excessive smokers from mal-nutrition of the retina. Another class of persons who ought not to smoke are those who have weak or unsteady circulations and complain of such troubles as palpitation, cardiac pain, intermittent pulse, habitually cold hands and feet, or chronic languor.

Lastly, there is reason for believing that the habitual use of tobacco is likely to retard the due growth and development of the body. If so, no one should become a smoker till he is well passed the period of puberty. Boys, moreover, have no excuse for smoking, for they are spared the hard wear and tear of adult life.

Now, after eliminating those who from idiosyncrasy cannot, and those who from bodily ailment or from tender years should not smoke, there will still always be a large residuum of happy folk who can smoke, enjoy smoking, and are indeed the better for it. These are they who use tobacco without abusing it—use it, that is to say, in moderate quantity, in due season, and honestly for the sake of the comfort which it gives them—a comfort every bit as legitimate as that which drinkers of tea, coffee, or wine extract in each case from their favourite beverage.

A few words on each of these points. By moderate smoking is meant smoking only just so much and so often as each man finds to be good for him. It is with tobacco as with alcoholic drinks. Every man of mature years, sound health, and common sense, soon gets to know what is the limit of safe indulgence for himself. However widely this limit may vary in different individuals, the following rule is absolute and unalterable—that when a smoker begins to ail bodily, or to be getting listless, dreamy, and disinclined for serious thought or action, or to shirk the duties of social intercourse, this limit has been exceeded.

Tobacco should be used as supplementary to food, not as a substitute for it. The season, therefore, for healthy smoking is after a meal. Tobacco should not be taken on an empty stomach (unless to stave off hunger) any more than alcohol. Smoking merely to kill time, or to colour a pipe (!) is a childish abuse of tobacco.

Against moderate smoking in a healthy person who enjoys it, not a single argument of any weight has yet been advanced. Perhaps the most plausible of them is this—that every smoker daily imbibes a small quantity of tobacco-oil and nicotine; and as these substances taken by themselves in the pure concentrated state and in large doses are highly poisonous, therefore every habitual smoker is slowly poisoning himself. Just as reasonable is it to condemn all alcoholic drinks, such as wine, beer, etc., as pernicious because a draught of pure alcohol will nearly or quite kill a man; or to condemn tea and coffee as dangerous drinks, because their active principles, theine and caffeine, taken alone and in large doses, are poisons. One of the best established truths in medical science is that the same physiological agent, according to the dose given, may produce effects which differ not merely in degree but in kind. The idea of small doses of tobacco or other such agent slowly accumulating in the system and at length producing the effect of a single large dose is *a priori* absurd, and also contradicted by experience.

So much, and often so much nonsense, is prated about the evils of tobacco that its virtues rarely get a hearing, and yet the latter are many and great. To quiet nervous unrest; to soothe a ruffled temper; to favour calm and impartial thought; to steady and clear (not to cloud) a confused, over-worked brain; to counteract the effects of physical exhaustion—these are just the things which tobacco does, and if it can effect these ends safely and pleasantly, who shall deny it a place among God's good gifts to men?



MAW'S REGISTERED STOPPER GUARD.

IT is to be hoped that the excessive ardour with which chemists and druggists recently combated the proposals of the Privy Council, with respect to the storage of poisons, will not have so far warped the judgment of any of them as to excite an undeserved hatred of all mechanical contrivances whatsoever. There may be very sufficient reasons against any arbitrary set of regulations which cannot be elastic enough to meet the thousand varying cases to which they

would have to be applied. But these considerations in no degree lighten, they rather heighten the individual responsibility of those to whom is entrusted the handling of deadly or dangerous drugs. We have no wish to prescribe the arrangements of any shop or dispensary; but we think they should be such that the proprietor could show them to a customer without imparting a sense of shame to himself or a sense of terror to his visitor. There is assuredly some sense of security to a stranger who notices that all bottles containing dangerous medicines are specially guarded, and it is not to be doubted that many poisoning cases might have been saved by some such arrangement as this. Many methods have been suggested as danger-signals, but we have seen none so readily applied and so easily worked as the one before us. The invention of Messrs. Maw, sketched in the accompanying engravings, so perfectly



answers its purpose that we may anticipate for it almost universal adoption. It consists of a stout india-rubber ring, which clings round the neck of the stopper, and to which is attached a small brass clip, which bites the lip of the bottle. Before removing the stopper it is necessary to loosen the clip. The check is sufficient, though to all appearance very slight. The guards are made very neatly, so that they are scarcely perceptible on the bottles, and they are also very inexpensive.

#### THE "MATCHLESS" MATCH.

THE Chemical Light Company (Limited), with a capital of £30,000, has been good enough to send us a box of matches. Desirous of preventing the losses of life and property, which often result from matches carelessly thrown about, this company has patented a process which prevents any red hot ash being left when the match is blown out. This removes one element of danger in the employment of matches, and the "Matchless" will doubtless become popular.

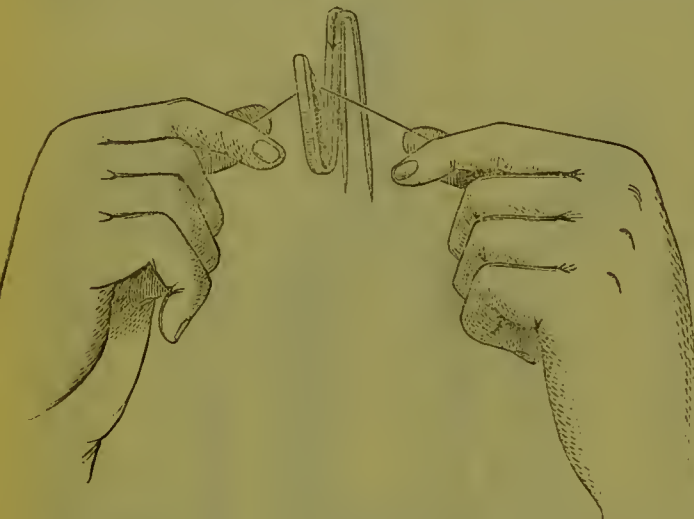
#### CHLORODYNE JUJUBES.

THERE cannot be two opinions of the superiority of the jujube form to that of the hard-baked lozenge for the administration of a medicine with such volatile ingredients as chlorodyne. Mr. A. P. Towle, of Manchester, chlorodyne manufacturer, has introduced these jujubes, and he has taken care to make them both attractive in appearance and very

agreeable in flavour. The jujubes are crystallized and supplied in bottles. They keep perfectly dry, though each one contains a very appreciable quantity of the medicine. They will doubtless obtain wide popularity during the forthcoming winter, and the proprietor has done well to supply them in bulk to the trade, instead of offering them as a patent medicine.

### INGENIOUS IDEAS.

Our readers who like to introduce those startling little trifles which are sure to attract the public eye as soon as they are seen, will find Messrs. Herbert and Higgin just the manufacturers to suit them. Here are their two latest ventures. First, a twine and thread cutter retailing at four-



pence, which contains a sharp little blade in its thick joint that cuts small twine or thread at once. The sharp points are whereby it is fastened on the coat or dress, so as to have it always ready. The second is a little waistcoat-pocket combination for ladies and bachelors. It is about as large as half-a-crown, though a trifle thicker. In front is a

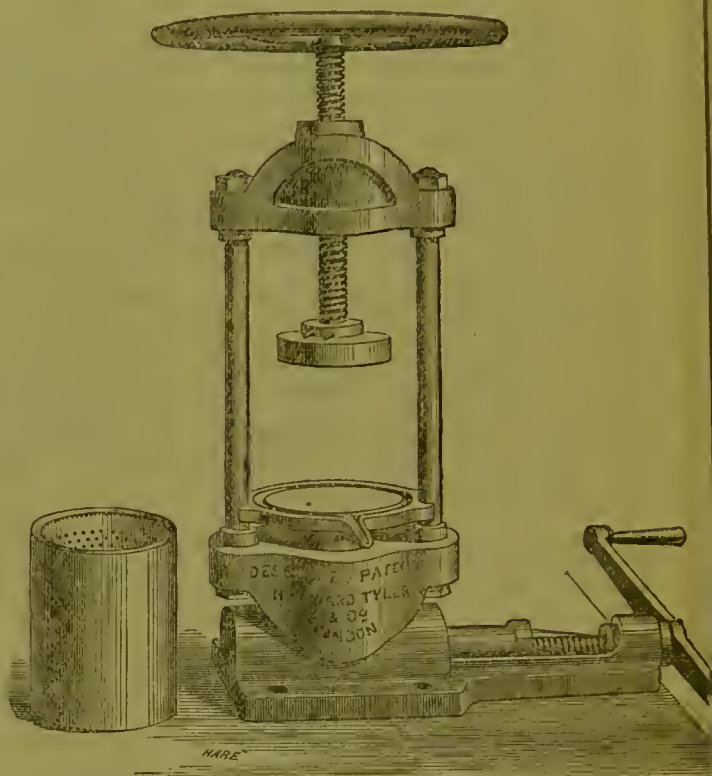


mirror, pins are disposed round the rim, and the back is a Bostonite tablet for erasible memoranda. This combination sells for sixpence, and retailers are supplied with either on show-cards containing a dozen.

### COMPOUND HYDRAULIC PRESS (DESGOFFE'S PATENT.)

The small hydraulic press, shown in the engraving, is one which we are told is largely adopted in France, and Messrs. Hayward Tyler and Co., engineers, Whitecross-street, who

are the licensees for Great Britain, introduced it first to English chemists and druggists at the Pharmaceutical meeting, on October 4th. It is a compound press, capable of being used as a screw press only, or as such, with hydraulic pressure added. The screw having been applied



to the utmost extent of the power of the manipulator, it is only requisite to turn the lower handle, and as that moves a ram working in a chamber of water, which forces a second ram into the same chamber, and the water being displaced, hydraulic power is brought to bear on the press, the pressure being by this means increased threefold. The patentees state that a pressure of sixteen tons can be applied by means of this press. The moderate price of this (£16) compared with the large hydraulic presses used by most of the wholesale firms, will doubtless recommend it to many pharmacists not in a wholesale, but in a somewhat extensive retail way of business.

### IMPROVED POWDER-FOLDER WITH RACK.

The annexed cut shows a new style of powder-folder introduced by Messrs. Maw, Son, and Thompson. It is light and elegant in appearance, something like a diminutive camp-stool, and the length between the corners which fixes



the length of the powders is adjusted by a small arm which catches in one of a series of notches and holds the little apparatus perfectly firm. It is made of bronze, with polished brass facings.

## ON THE COCA LEAF, AND ITS USES IN DIET AND MEDICINE.

By J. H. SCRIVENER, M.D., LIMA.\*

THE two most valuable vegetable productions of Bolivia are the Cascarilla (i. e., the Cinchona, or Peruvian Bark), and the Coca; the former is well known to fame, the latter comes next in importance for its services to mankind.

The coca (*Erythroxylon coca*) is a shrub which grows to about six feet in height. Its leaves are about one inch in length, and of a light-green colour; its flowers are white, and produce a red berry. In its cultivation the soil is well prepared previous to the sowing of the seeds, and then divided into different compartments. After the sprout has come out, which takes place in a few weeks, and when they have grown to two or three feet in height, they are transplanted to other grounds, within two or three feet of each other, which are called *cocales*. These plantations are formed in the most shady places, for the purpose of protecting them from the heat of the sun, which is very powerful in the deep valleys of these regions. Indian corn is also sown between them, the broad shady leaf of which serves as an additional protection to them.

The coca plant grows luxuriantly in all the valleys, and arrives at perfection in about two years; the time is known by the height of its branches and the brittleness of its leaves, which break or fall on touching them. The Indians are careful in gathering the leaves, as they are delicate and easily broken from their stems. As soon as they are gathered they are laid upon the ground for the purpose of being dried by the sun, which, as this process gradually takes place, changes the colour of the leaf from a light to a dark green. The leaves, when perfectly dried, are wrapped up in palm-leaves and covered with flannel. Packages are then made of them of fifty pounds each, which are called *cestos*; others of 100 pounds are called *tambors*.

They are then conveyed on the backs of llamas to the Custom-house of La Paz, and sold to the miners for the Indians of their establishments. The duties on the coca form an important revenue to the nation, amounting to 400,000 dollars a year—£80,000.

It is not known when the coca was first discovered, but it must have been at an early period, probably under the Incas. Its production was very great during the Spanish sway, for it then became an article of importance to the Indians. Previous to that period, according to Prescott, it was reserved for the Incas and nobles of the country.

There are many estate-holders in the city of La Paz who have large plantations of coca, from which they derive a large revenue; they are not exposed, like other plantations, to local causes or atmospheric changes which might injure or destroy them.

According to an article published in *La Tribuna*, August 5, 1863, "the Indians of Peru refer to mystic traditions for the origin of this plant. They say that Manco Capac, the divine son of the Sun, descended in the primitive epoch from the rocks of the Lake Titicaca, and bestowed the light of his father upon the poor inhabitants of the country; that he gave them a knowledge of the gods, taught them the useful arts and agriculture, and presented them with the coca, that divine plant which satisfies the hungry, gives strength to the weak, and makes them forget their misfortunes."

In the splendid and sumptuous city of Cuzco (the capital of the Incas), the coca leaf was used as an article of luxury; the Incas and the nobles masticated it in their palaces and temples, which were richly adorned with gold and silver.

There are different opinions of the properties of the coca, for, according to some writers, it contains a small quantity of some narcotic, which intoxicates those who masticate it; whilst others affirm, as cited by Prescott, that its effects are similar and equally injurious to the mastication of tobacco.

The properties of the coca are variable, according to the quantity employed. It is a stimulant, a tonic, slightly narcotic, and very nourishing. It possesses an agreeable aroma, and a flavour similar to that of tea, and, like that

plant, is frequently employed in the form of an infusion in slight disorders of the stomach.

There are certain signs in the physiognomy of a coca chewer which manifest the influence of the plant; they are characterised by a paleness of the lips, a slight yellow tinge about the angles of the mouth, and the teeth are stained with a bright yellow. With its use the countenance, which usually presents an afflicted aspect, becomes more animated; the eyes assume a brilliant appearance; the pulse is strong and frequent, and there is a desire for physical exertion. These are, undoubtedly, signs of the stimulating and tonic effects of this plant.

Abuse of the coca occasions, according to some authors, signs of premature old age, which are marked by an unsteady step, a yellow skin, a want of brilliancy in the eye, and a general indifference or apathy. I have seen hundreds of Indians, during my residence in Bolivia, who have chewed the coca-leaf from youth upwards, many of whom had attained their 80th year, and who showed no signs of having been affected by the plant. I have only seen the signs above mentioned in very advanced age, for the Indians are proverbial for longevity.

There can be no doubt that the coca is both salutary and nutritious, and, we may add, the best gift that the Creator could have bestowed on the unfortunate Indians. It is of inestimable value to them, for without it they would do nothing with spirit or goodwill. They are always supplied with a quantity of its leaves, which nourish and strengthen them; and it is their great resource in their trials and afflictions. They always carry a bag of the leaves hanging from their neck, and a small flask by their side filled with ashes or lime. The manner of employing them is very singular, and is as follows:—The Indian takes a handful of coca-leaves out of the bag, and withdraws the filaments from them. He then puts them into his mouth, and chews them into the form of a ball. He then wets a piece of thin stick, which he introduces into the flask; and on withdrawing it, it is covered with the lime or ashes. He then pierces the ball in his mouth with it till it has acquired a strong and pungent taste, which is naturally followed by a copious salivation: part of this salivation is ejected from the mouth, and part of it is swallowed. The ball is retained in the mouth for about an hour, and is then renewed with another handful of leaves.

The proprietors of the mining establishments in Potosi and other districts are abundantly supplied with coca, which they daily distribute to the Indian workmen. The quantity which they give to each Indian is an ounce and a half, with the exception of holy days, when it is increased to three ounces. Groups of Indians may be seen on those days, during the hours of rest from their labours in the mines, chewing the coca with as much pleasure and delight as a connoisseur in tobacco smokes a rich Havana.

The effects of coca on the Indian are very visible; they are strongly marked in his countenance by a greater brilliancy in his eye, more agility in his step, and he is animated and contented; he appears as if he had partaken of a rich repast. There can exist no doubt, in view of these beneficial effects, of the erroneous opinions of authors who have written on the noxious effects of this plant; and to prove still further their little knowledge of its properties, I shall bring forward the effect it produces upon travellers.

The Indians of Bolivia are very remarkable for the rapidity of their journeys on foot, and are probably without rivals as postillions. There are some who are called *andadores* (swift travellers), who are employed by the Government on critical occasions to convey dispatches to distant parts, for the swiftness of their journeys and their well-known fidelity. They travel from sixty to seventy miles a day—from the rising to the setting of the sun—and for several successive days. Their road generally lies over passes in the mountains only known to them, and they are without any other food than a few coca-leaves, or a small quantity of powdered Indian corn. But, what is more surprising, and will appear almost incredible, is, that they travel these long distances without being weary, or at least without signs of fatigue.

I heard from good authority that, during the war for the independence of the country, a battalion of infantry, composed principally of Indians, made forced marches of sixty miles a day, notwithstanding the weight of their knapsacks and their arms, and without any other food than the coca,

\* From the *Medical Times and Gazette*.

and occasionally a small quantity of Indian corn. This was found sufficient to sustain their strength, to keep them lively and contented, and ready and disposed to continue their journeys, which invariably terminated without signs of fatigue.

There was at that period a battalion of infantry, under the command of General Valdes, which travelled 108 miles on foot in three days, and without any other food than the coca leaves.

The Indians, according to Tschudi, looked upon the coca plant as sacred and mysterious. It formed a principal part in their religious ceremonies, and they burnt it upon their altars as a pious offering to their deity. The priests chewed it at their prayers to conciliate the benevolence of their gods, and blessed it to obtain every worldly advantage. The Indians, according to the same author, filled the mouths of the dead with coca-leaves for the purpose of securing their salvation; and some have affirmed that this custom still exists among them, and that when an Indian meets with a mummy he kneels down with devotion, and places around it a quantity of coca-leaves.

There are few plants that can be compared to the coca for its varied and inestimable qualities. Besides its admirable effects in nourishing the system, it is employed with advantage, in a medical point of view, as an excellent tonic in weakness of the stomach, and other affections of that organ. It is to be hoped that the day is not distant when that plant will become generally known to the medical faculty, and placed beside those in our Pharmacopœias as one of the most important of the kind.

I cannot admit the opinion of the Jesuit Julian, who states that the coca would lose the strength of its properties by exporting it to Europe, and that medical men would not employ it as a tonic. There can be no difficulty, in my opinion, in preserving the properties of the plant, as the leaves might be packed up in cases lined with tin, as the tea is from China, which would prevent it from becoming impaired in the voyage.

It would have been interesting to have known when this plant was discovered, but this was a task we could not accomplish, and will probably remain a mystery. The information we have acquired of it is from the period of the Conquest, when the coca was employed in the manner we have described; and, from the knowledge we possess of its valuable qualities, we firmly believe that when they become known in Europe it will be employed with advantage for complaints of the stomach, and as a solace and powerful auxiliary unequalled in the history of plants to the poor and afflicted when suffering from hunger and grief.

The coca was introduced into Salta, a province in the Argentine Republic, about a century ago, and is frequently employed by its inhabitants. The peasants in the valleys of San Carlos, Molinos, and Rinconado chew it with the same pleasure and advantage as the Indians of Bolivia. It is not unknown in Buenos Ayres, the capital of that State, where it is gradually coming into use, and can be obtained at several chemists' shops. The natives employ it, in the form of an infusion, in disorders of the stomach.

It is to be regretted that we have no further details of the coca, which is attributed to the conquerors of Peru, who were indifferent to everything save gold and silver, and who destroyed everything that tended to a knowledge of the country. It is well known that the Incas transmitted to their descendants an account of their laws, arts, and sciences—in fact, everything relating to the welfare of the country. These accounts were made of cords of different colours, called *quipos*, which, according to Prince San Severo, served them as an alphabet. It would have been an easy task to the Indians, who had acquired a knowledge of the Spanish language, and who served as interpreters to their conquerors, to have deciphered the *quipos*; but the indifference of the latter to all that was scientific had no bounds; they were satisfied with amassing gold, silver, and precious stones, and cared nothing about the history and customs of the country.

It is announced that the preparation of cocoa known as Kendall's Theobromine is to be worked by a company. The capital is to be £10,000 in 2000 shares at £5 each, with power hereafter to increase to £25,000.

## Pharmacy.

WE are indebted to the *Chemical News* for the following abstracts of two very useful pharmaceutical contributions which recently appeared in the *American Journal of Pharmacy*.

### DETECTION OF TURMERIC IN POWDERED RHUBARB AND YELLOW MUSTARD.—DR. J. M. MAISCH.

A small quantity of the suspected rhubarb is agitated for a minute or two with strong alcohol, and then filtered, chrysophanic acid being sparingly soluble in this menstruum. The brown yellow colour of the filtrate is due to the resinous principles of rhubarb mainly; if adulterated with turmeric, the tincture will be of a brighter yellow shade; a strong solution of borax produces, in both tinctures, a deep red-brown colour. If now pure hydrochloric acid be added in large excess, the tincture of pure rhubarb will instantly assume a light yellow colour, while the tincture of the adulterated powder will change merely to a lighter shade of brown-red. The test is a very delicate one, and is based on the liberation of boric acid, which imparts to curcumin a colour similar to that produced by alkalies, while all the principles of rhubarb soluble in strong alcohol yield pale yellow solutions in acid liquids. The same test, applied in the same manner, is also applicable to ground mustard-seed. The seeds of *Sinapis alba* yield a powder of a yellow-grey colour, entirely distinct from the colour of yellow mustard met with in the trade. Agitated with alcohol, and filtered, a turbid solution is obtained, which assumes a bright yellow colour on the addition of the borax solution, and becomes colourless or whitish again on being supersaturated with hydrochloric acid. If the mustard be coloured with turmeric, the filtrate has a yellow tint, becomes brown-red by borax, and retains the colour on addition of hydrochloric acid. All the so-called yellow mustard of commerce which the author has had occasion to examine, whether ground in England or the United States, contains turmeric, a practice which ought to be discountenanced; for, under the yellow colour imparted by turmeric, adulteration of mustard may be carried on to an almost indefinite extent, if strength be supplied by the addition of a little capsicum.

### TESTING COCHINEAL.—J. M. MERRICK, JUN. S.B.

The author takes  $2\frac{1}{2}$  grms. of the drug, previously ground to powder, and boils that quantity in a capacious narrow-necked flask, with 750 c.c. of distilled water, for one hour. The liquid is immediately filtered through dry paper-filters, and tested when cold in the following manner:—50 c.c. are measured off and poured into another flask of about 200 c.c. cubic capacity, and the measuring vessel rinsed with a definite quantity of water, say 10 to 15 c.c.; a weak solution of permanganate of potassa is then run in from a burette with a glass cock, the flask being well shaken after the addition of every 10 c.c. of the permanganate solution (this does not, as does solution of bleaching-powder, precipitate the colouring matter of the cochineal), so much is added as to change the colour of the cochineal solution to a very faint pink shading on yellow, but never reaching a full yellow; this pink shade should be persistent, that is to say, it should not turn yellow after standing for fifteen minutes. The principal points in this practically very good method are—The use of a weak solution of permanganate; to have a very faint pink colour as a standard of comparison; to let the liquids remain, after agitation, together ten to fifteen minutes before comparing them. The author concludes his paper by observing that very little can be told of the value of a sample of cochineal by a mere physical examination, while the frequent inconsistency between value and price is equally surprising, the author having known samples to differ 30 per cent. in colouring power and only one or two cents per pound in price.

WE have received Messrs. Newbery's new catalogue of Patent Medicines, etc., containing 116 pages closely printed, of these very interesting adjuncts to our daily bread. A new arrangement has been adopted by classifying the different medicines under their generic and not under their specific titles; that is to say, all the pills, ointments, or balsams are respectively together, and the proprietor's name comes in alphabetical order. This seems likely to render reference more easy.

ON THE GENUS *BOSWELLIA*.\*

Read before the Linnean Society, April 1, 1869.

WE commend to all lovers of research, and specially to those who consider that accurate investigation must be clothed in dry repulsive technicalities, this exquisite and interesting paper. It will be found in the "Transactions of the Linnean Society," vol. xxvii., Part Second.

One thing is deeply to be regretted, namely, that the quotations from sacred writ have not been printed in full, but are buried in foot-note references. This probably is in accordance with scientific usage, but the literary enjoyment of the communication is impaired. The intention of the writer may be best explained in his own words.

"I offer here the descriptions of three new species of *Boswellia*, native of the Soumali country. The characters hitherto given of the genus *Boswellia* should be reconsidered; and hence the first part of the title which I have very reluctantly given to this paper. Another of these plants, all of which yield frankincense, yields, I believe, the bulk of the olibanum of commerce. And I believe that the discovery of these plants settles at last the controversy which has gone on for ages concerning frankincense."

The first undoubted record of its use is to be found in Exodus xxx., v. 34-35. "And the Lord said unto Moses, take unto thee sweet spices, stacte and onycha, and galbanum; these sweet spices with pure frankincense: of each shall there be a like weight. And thou shalt make it a perfume, a confection after the art of the apothecary, tempered together, pure and holy."

Frankincense is also named in the poetical books of the Old Testament.

"Who is this that cometh out of the wilderness, like pillars of smoke, perfumed with myrrh and frankincense, with all the powders of a merchant?"—(Song of Songs, iii. 6.)

Abundant illustrations are given. Soon, however, the word *incense* rose into its higher poetical signification, and thus we get some sublime sentences, as this, "Let my prayer be set forth before thee as incense, and the lifting up of my hands as the evening sacrifice." Herodotus, whose testimony is of peculiar value, says:—

"Arabia is the only country which produces frankincense, myrrh, cassia, cinnamon, laudanum. The Arabians do not get any of these, except myrrh, without trouble. The frankincense they procure by means of the gum storax, which the Greeks obtain from the Phœnicians; this they burn, and thereby obtain the spice. For the trees which bear the frankincense are guarded by winged serpents, small in size and of varied colours, whereof vast numbers hang about every tree. They are of the same kind as the serpents which invade Egypt, and there is nothing but the smoke of the styrax which will drive them from the trees."

"As one proceeds beyond Heliopolis up the country, Egypt becomes narrow, the Arabian range of hills, which have a direction north to south, shutting it up on one side, and the Libyan range upon the other. The former ridge runs on without a break, and stretches away to the sea called Erythræan: it contains the quarries whence the stone was cut for the pyramids of Memphis; and this is the point where it ceases its first direction, and bends away in the manner above indicated. In its greatest length from east to west it is, as I have been informed, a distance of two months' journey; towards its extreme east, its skirts produce frankincense." "The Arabs brought every year a thousand talents of frankincense in tribute to Darius." "It is also on the great altar [of gold] that the Chaldeans burn the frankincense, which is offered to the amount of one thousand talents weight every year at the festival of the god" [Bel]. In describing "the mode of embalming amongst the Egyptians, according to the most perfect practice," he says, "they fill the cavity [of the abdomen] with the purest bruised myrrh, with cassia, and

every sort of spicery, except frankincense." And of the Scythians, "Their women make a mixture of cypress, cedar, and frankincense wood, which they pound into a paste upon a rough piece of stone, adding a little water to it. With this substance, which is of a thick consistency, they paste their faces all over, and indeed their whole bodies. A sweet odour is thereby imparted to them; and when they take off the plaster on the day following, their skin is clean and glossy."

Theophrastus (B.C. 394-287) gives a most accurate account of frankincense, as also Diodorus (B.C. 50), who is eloquent on the subject. Pliny and many other authors, modern and classical, are cited.

The conclusion drawn is, that Arabia produces frankincense, and that the Soumali country also produces frankincense, and probably the bulk of the olibanum of commerce.

The plants enumerated in the genus *Boswellia* are—

1. *Boswellia Carterii*. Birdwood, n. sp.
2. *Boswellia Bhau-Dajiana*. Birdwood n. sp.
3. *Boswellia Papyrifera*. Richard.
4. *Boswellia Thuritera*. Colebrooke.
5. *Boswellia Frereana*. Birdwood, n. sp.

We are not unmindful that in these columns we have to address some who are themselves neither experienced botanists nor pharmacologists, but yet we know many of them feel the keenest interest in the researches of their contemporaries, and therefore we offer no apology for these details.

This subject is interwoven with the poetry of pharmacy. Read this:—

"And he shall take a censer full of burning coals of fire from off the altar before the Lord, and his hands full of sweet incense beaten small, and bring it within the veil. And he shall put the incense upon the fire before the Lord, that the cloud of the incense may cover the mercy seat that is upon the testimony that he die not." (Lev. xvi. 12, 13.)

But what is the sweet incense beaten small? The perfume made after the art of the apothecary? "Sweet spices with pure frankincense." Listen for a moment to Theophrastus.

"Concerning frankincense and myrrh and balsam, and whatever else is like these, it has [already] been said, that they are produced by incision, and spontaneously. And we must [now] endeavour to tell what is the nature of the trees, and if they have anything peculiar as to their origin or collection, or other matters; and, in like manner, concerning the other sweet-smelling trees; for almost the whole of them grow in places towards the south and east. The frankincense-tree and myrrh and cassia and cinnamon grow in the Chersonese of the Arabians, about Saba and Adramyta, and Citibæna and Mali. But the trees of frankincense and myrrh grow, some of them on the mountain, and others in private plantations, at the foot of the mountain; on which account, some of them are cultivated, and others are not: and they say that the mountain is lofty and thickly wooded, and covered with snow, and that rivers also flow down from it into the plains, and that the frankincense-tree is not large, being five cubits high, and covered with boughs, and that it has a leaf like that of the pear-tree, only much smaller, and is of a grassy colour, very like rue, and has altogether a smooth bark like the laurel; but that the myrrh-tree is still smaller in size and more shrub-like, and that it has a hard trunk, and is twisted towards the ground, and is thicker than a man's leg, and has a smooth bark, like purslane. But others, who say they have seen them, nearly all agree concerning their size, namely, that neither of the trees is large, the myrrh-tree being the smaller and lower [of the two]. And they state that the frankincense bears a resemblance to a laurel, and that it has a smooth bark, but that the myrrh is prickly and not smooth, and that it has a leaf like the elm, only crisp, and prickly at the top, like the ilex-tree. And these said that in a voyage which they were making from the Bay of Heroes, they disembarked to search for water on the mountain, and thus saw the trees and the mode of collecting [the frankincense]. And that the trunks and boughs of both were incised; but that the former appeared to have been cut, as it were, by an axe, and the latter to have had more gentle incisions; and that the drops partly fell down and partly remained on the tree. And that in some places mats woven of palm-leaves were placed underneath, while in others the ground underneath was hardened and kept clean: and that the frankincense on the mats was pure and

\* "On the Genus *Boswellia*, with Descriptions and Figures of Three New Species." By GEORGE BIRDWOOD, M.D., Edinburgh.

transparent, but that on the ground less so; and that they scraped off what adhered to the trees with knives, so that the bark stuck to some of them. And they said that the whole mountain was divided among the Sabæans; for that they were the lords [of the place], and that they were just towards one another, on which account no one kept any guard [over his own property]; and that having themselves taken thence an abundance of frankincense and myrrh, which they placed in their ships, none of the inhabitants being present, they had sailed away. And these both told this, and said they heard that the myrrh and frankincense is gathered together on every side to the Temple of the Sun; and that this belongs to the Sabæans, being by far the most sacred thing in the country, and that certain armed Arabs have the custody of it; and that when they bring it, each, heaping up his own frankincense, and the myrrh in a similar way, leaves them with the keepers, and places upon the heap a little tablet, stating the number of the measures, and the price at which each measure is to be sold; and that when the merchants come they inspect these tablets, and having measured any heap that pleases them, they put the price of it in the place from which it is taken; and that the priest then coming takes a third part of the price for the god, and there leaves the remainder, which is kept safe for the owners until they come and take it. But certain others say that the frankincense-tree is like the lentisk, and its fruit to the berries of the same, and that the leaf of it is reddish; and that the frankincense from the young trees is whiter and less fragrant, while that from the older trees is yellowish and more fragrant; and that the myrrh-tree is like the terebinth, but rougher and more thorny, and the leaf a little rounder and, if chewed, resembling the terebinth in taste; and that of these, also, the older are the more fragrant. And that both grow in the same place, and that the ground [there] is argillaceous and flaky, and that springs of water are rare. These, things, however, are contradictory [to the statement] that it snows and is wet [in that locality], and that rivers issue from it. And others also say that the tree is like the terebinth, and others that it is the terebinth itself; for that specimens of the wood were brought to Antigonus by the Arabs who conveyed the frankincense, and that they differed in nothing from the terebinth. These, however, showed still greater ignorance; for they thought that both the frankincense and the myrrh grew on the same tree. On which account, the report brought by those that sailed from the City of Heroes is more credible; since the frankincense tree that grew above Sardis, in a certain temple, has a leaf like the laurel, if from this we may form a conclusion, and the frankincense produced from it, whether from the trunk or branches, is like the other frankincense in appearance and in smell when it is burnt. And this tree alone grew without [any culture]. And some say that the frankincense grows more abundantly in Arabia, but more beautiful in the neighbouring islands, over which the Arabs have sway; for there they make figures upon the trees of whatever they like; which is not incredible, as they admit of any incision that persons may wish to make in them. Some of the grains also are very large, in bulk as much as a handful, and in weight more than the third part of a mina. All frankincense is brought to market in a rough state, similar in appearance to the bark of a tree; but of myrrh there are two kinds, the one in drops, and the other in moulds. The quality is judged of by the taste; and from this they choose what is of uniform colour. Concerning frankincense and myrrh, this is nearly as much as we have heard up to the present time."

Yet we have heard of three, who, "when they were come into the house, they saw the young child with Mary his mother, and fell down and worshipped him: and when they had opened their treasures, they presented unto him gifts—gold and frankincense and myrrh." Was ever *Materia Medica* so transfigured?

Nothing more is here attempted than to direct attention to this admirable paper. Will our readers borrow it from some good Fellow of the Linnean, and read it for themselves? Then they will learn something about gums and spices, and something about "the immemorial and most beautiful rite of burning frankincense. A pot of holy basil is placed before every Hindoo home; and the mother of the house may be seen every morning, after having ground the corn for the day, and performed her simple toilet, walking

round and round the four-horned altar, on which the pot of holy basil is set, invoking the blessings of heaven on the father of her children and on them."

#### GROOMBRIDGE'S SCIENCE MANUALS.\*

ON more than one occasion we have had to refer to this series as comprising works for students of an extremely practical character. Very neat and unpretentious in their appearance, they have been distinguished by their thoroughness as elementary treatises. Professor Barff's Introduction to Scientific Chemistry was the first of the series, and those who have used it know how distinctly and lucidly it presents the elements of the science to the student who is willing to execute the work indicated. These works are expressly intended to prepare students for the matriculation examination of the University of London, and they therefore arrive at about the stage which that examination demands. But they begin from the beginning; they presuppose nothing. The new work of the series is by Mr. Richard Wormell, and comprehends the elements of mechanics, hydrostatics, and optics. In the teaching of these departments of natural philosophy, the clearness depends to a considerable extent on the excellence of the diagrams, and in this respect this book is especially worthy of praise. The student who works through this manual carefully will be sure to comprehend what he has studied, the descriptions being models of lucidity. He will only have entered the respective fields of observation, but he will have been taught the principle of scientific deduction from observation, which are at the foundation of, and which may be said to constitute every branch of what is called natural philosophy.

From the second part of the work (hydrostatics), we may quote the author's interesting description of Torricelli's discovery of the pressure of the atmosphere:—

"Nothing in the history of science is more remarkable than that up to the time of Galileo (1636) the fact that the atmosphere exerted pressure was unknown. Effects produced by this pressure were observed on all sides, but they were set down to other causes. When the water rose in a pipe from which the air had been withdrawn, as is the case with the common pump, in apparent violation of the laws of gravity and of the law that liquids maintain their levels, philosophers, unable to account for the circumstance, satisfied themselves by considering it due to a freak of nature. They set it down as an axiom that "nature abhors a vacuum," that nature would not allow any part of the universe to be void of matter. Thus, they argued, when air has been withdrawn from the pipe of a pump, nature's abhorrence of a vacuum compels the water to rise and fill the vacant space.

"In 1636, however, some mechanics made a pump to raise water from a well, the surface of the water being fifty feet deep. They found that they could not make the water rise more than thirty-two feet. They applied to the celebrated philosopher, Galileo, to solve the mystery. He could not explain it, but he said one thing was certain—Nature's abhorrence of a vacuum did not extend over thirty-two feet.

"The subject was then investigated by Torricelli, a pupil of Galileo. He argued that whatever the cause might be, since it was sufficient to support thirty-two feet of water, if a heavier liquid were used, a column of less altitude should be supported. For example, since thirty-two feet of water is sustained, of mercury, which is thirteen and a half times as heavy as water, thirty-two feet divided by thirteen and a half, or twenty-eight inches, ought to be supported.

"He conducted his experiment as follows:—He took a vessel of mercury and a glass tube over thirty inches long, open at one end and closed at the other. Having filled the tube with mercury, he closed the end with his finger, inverted the tube, plunged the covered end below the surface of the mercury in the vessel, and removed his hand.

"The mercury in the tube subsided until it stood at the height of twenty-eight inches.

"Supposing the surface of the mercury in the vessel to be prolonged under the tube, he saw that the fluid outside the tube was only subjected to the pressure of the atmosphere,

\* "A Course of Natural Philosophy." By RICHARD WORMELL, M.A., B.Sc. London. Groombridge.

while that under the tube sustained the column of mercury above it. The secret was now revealed to him, for he concluded at once that the pressure of the atmosphere on an area equal to the aperture of the tube was equal to the weight of the mercury in the tube.

"This conclusion was confirmed by carrying the apparatus up a mountain. Pascal, a French divine, argued that when a portion of the air was left below, the pressure of that which remained must be diminished; consequently, if the column of mercury were really supported by this pressure, the height of the column must vary with different distances above the earth's surface. The experiment was tried, and the mercury in the tube was found gradually to sink during the ascent."

### THE HISTORY OF PHARMACY.\*

THE author of this work, which will be a valuable addition to the library of every educated pharmacist, justifies its necessity by deploring the absence of any pharmaceutical history in the Italian language. And although not many new facts are presented, it is written in that pleasant facile manner which insures unflagging interest on the part of even a casual reader, and combines amusement with instruction. Being of later date than M. Labelonye's "*Pharmacie en Europe*," it is more valuable as presenting us with the actual state of pharmaceutical art, and although some important modifications in England and Prussia remain unnoticed, it gives, on the whole, a tolerably accurate idea of pharmacy, pharmacists, and their peculiarities in each country treated of. We are inclined to think that the author has rather closely followed M. Labelonye's descriptions of Spanish, German, and Dutch pharmacy. His description of our own is, however, most interesting, and pleasantly shows us how we appear in the eyes of an intelligent and observing Italian. Notwithstanding the gravity of the subject, the book is exceedingly humorous, and though containing no absolute "*Pasquines*," shows how largely the faculty of appreciating the ridiculous is inherent in the now free and happy descendants of Romulus and Remus. The author, in whose native land the pharmacist enjoys much social consideration, has a laugh at our splendid shop-fronts and our worship of the god *business*; but without wishing to be rude, ought not science to be enshrined in a temple worthy of her; and must not the "*οἱ πολλοί*," on entering a large and tastefully decorated London pharmacy, feel more deferential reverence for the author's goddess and her priests, than on descending the two or three steps conducting to the dark and dirty little dens that do duty for pharmacies in most Italian towns? The author has done well; he gives in the frontispiece a representation of his "*botteghe*," which certainly compares well with any in the Via Toledo, but the shaft levelled at us must be a boomerang, for on each sub-facia appears in large characters and in English the word "*TEAS*." We admire this appeal to our travelling countrymen, and believe that, notwithstanding his assertion to the contrary, science and business go hand-in-hand in Italy as in England.

The work is divided into two parts, the first treating of ancient empiricism, and the second of modern pharmacy. In his apologetic introduction, the author quotes the following from Aristotle: "*Dignum itaque est, O Alexander, ut scias Medecinam Magnam, quæ est Gloria inestimabilis et Thesaurus Philosophorum.*" The elder Pliny and Clement of Alexandria note that the magi or wise men employed drugs, and were probably both the doctors and druggists of those times. The Egyptians used litharge, sulphur, and sal ammoniac, so named from the temple of Jupiter-Ammon, where the sublimed camel's dung furnished the salt.

About 1990 years before Christ, the Ishmaelite merchants furnished Abraham with gums, myrrh, frankincense, balsam and amber. Jeremiah is recorded to have used a fig-poultice, B.C., 1160; in the time of Pericles, Aristophanes mentions that two individuals with broken bones were taken to a certain Doctor Pittalon's *iatrion*, which was probably a kind of mixed surgery and pharmacy; and Homer

makes mention of an ambulance established under the walls of Troy by two sons of Esculapius. Fifty years after Hippocrates, Aristotle tells us that he practised pharmacy to obtain a living. Passing over the Alexandrian school, we now arrive at the time when Rome flourished and became the seat of the arts and sciences. Pharmacy there degenerated into the practice of procuring abortions, administering love-philters (*aque amatrixes*), and assassination by poisons. Women called *Sagæ* (hence *sage-femme*) practised these pharmaceutical abominations, gathering mandrake, thorn-apple, and aristolochia at midnight (we have gathered them ourselves on the moonlit ruins of the Coliseum, which vouches somewhat for ancient accuracy of description). These infused in wine with cantharides constituted the hellish *satyrion* or *hippomane*, to which incentive draughts to lust the ferocious Caligula fell a victim. These malpractices brought pharmacy to ruin, and as Rome decayed, magic, astrology, black arts, and *acqua tofana* culminated in rendering odious the profession of pharmacy. In the middle ages, France seems to have been the first to have recognised the importance of regulating the sale and preparation of medicines. In the thirteenth century there was a guild of apothecaries in Paris, under the patronage of Saint Nicholas. We were unaware until now that he was our patron saint; may he forgive us our ignorance. Several chapters are devoted to the mediæval history of pharmacy in France, from the time when druggists took this singular oath: "I swear and promise before God to give aid and succour to all who employ me, and to keep no old or bad drugs in my shop," until the present day when the first-class pharmacien must be a bachelor of arts and sciences. In the next chapter, the author goes into the most extravagant rhapsodies on the discovery of the syringe by an Italian named Gatenaria, who died in the year 1496, at the University of Pavia. Louis XIII. is said to have had 220 enemas administered to him in six months, and in the next reign they became so fashionable that ladies used to have three or four a day perfumed with roses, angelica and bergamot, in order to keep their complexions clear and their skins white.

In the second part of this work, the first chapter is devoted to the consideration of pharmacy as a science, and as a mere mercantile pursuit. The arguments are well-developed and exhaustive, but as usual, the deduction is unsatisfactory. We now arrive at the author's account of English pharmacy. He gives a synopsis of the examinations, but makes a mistake in including mineralogy—a branch of science unfortunately too little studied in this richest mineral country. He deplores the fact that out of about 10,000 individuals practising pharmacy in Great Britain, three-fourths can only lay claim to the title of *chemists* through the tolerance of the Government. He further says: "This melancholy and scandalous state of anarchy gives an odd and comic picture of English customs. I have seen, for example, in a London street, the following inscription: So-and-So, chemist and obstetric surgeon, and on a window the words 'Delivery-room.' This originality seems doubly marvellous to anyone who knows the prudishness of the English in matters of *pudicitia*." In this chapter, which is one of the most interesting in the work, the author criticises with much humour our business tendencies, and the way we have of eulogising insignificant preparations by labels chiefly composed of strings of adjectives. The words "prescriptions prepared with the greatest accuracy," to be found on nearly every shop-front or prescription-envelope, seems to irritate our friend, for he says "we believe that not only in England, but in Italy, France, and Germany, prescriptions are accurately dispensed if the druggist be an honest man and know his business. Our "solar spectra" or show carboys adorned with cabalistic characters amuse him immensely, and in fact every peculiarity we possess is aptly delineated. We might continue quoting from this clever word-painter of our pharmaceutical originalities; but it would scarcely be fair to deprive the many readers that the book will have of too much amusement. In comparing the English with the French student, he says "Jean Jacques stays in Paris, and John James returns to his native town." We do not agree with the author here, and think the reverse to be more frequently the case. We may return to this interesting volume shortly.

\* Storia della Farmacia e dei Farmacisti, per Frederigo Kernot. Napoli, 1871.

We have to acknowledge the receipt of the sixth annual report of the Quekett Microscopical Club, which, under the distinguished presidency of Professor Lionel S. Beale (elected a second time), continues its high-class investigations into the "great world of littleness."

We have also to acknowledge several small almanacs from the Graphotyping Company (Limited). The object is for tradesmen to sell or give them away in their respective localities, only one supply being sent to any town. The Graphotyping process gives very handsome engravings, the effect being somewhat more like a sketch than an ordinary woodcut. In these almanacs there are several tinted views, and the letterpress is excellent both in its intrinsic and extrinsic qualities.



**T**HE chemists and druggists of Sheffield have assented to the principle of closing their establishments at earlier hours than hitherto. Since the 1st inst. the majority of the shops in the town closed at seven o'clock, and those in the suburbs at eight o'clock. On Saturdays the hours are nine and ten o'clock respectively.

The guardians of the parish of Birmingham have, under the sanction of the Poor-law Board, established a central dispensary at the parish offices for the supply of medicines and for vaccination cases instead of receiving medicines from the district medical officers. One room has been fitted up as a dispensary, partitioned off so that the remaining portion may be used as a waiting-room for persons applying for medicine. There are also two consulting rooms for the use of the medical officers, properly fitted up, and a store room. The tenders for the supply of drugs, medicines, medical appliances, etc., were as follows: Mr. Holdsworth, Upper Priory, Birmingham, £74; Messrs. Banks and Richards, Bull Ring, Birmingham, £70; Mr. Thomas Humphreys, Bull-street, Birmingham, £66.—The guardians of the Dudley Union have accepted Mr. Nicklin's tender for the supply of drugs and druggists' sundries.—The guardians of the Nottingham Union have accepted the tender of Messrs. Parr and Atherton, for the supply of drugs at £137.—The guardians of the Birkenhead Union have accepted the tender of Mr. Symes, chemist and druggist, Oxton-road, for the supply of drugs to the inmates of the workhouse.—Messrs. J. H. and S. Johnson, of Liverpool, have been elected as contractors for drugs, etc., to the parish union.—The guardians of the Stockport Union have accepted Mr. Grey's tender for the supply of drugs to the workhouse.—Mr. J. Nightingale supplies the Bolton workhouse with soda at 5s. 3d. per cwt.—The tender of Mr. Kellington, chemist, has been accepted by the guardians of the Hull Union for the supply of drugs.

#### DEATH FROM ARSENIC.

On the 30th ult. an inquest was held at Hanley (Potteries) on the body of Mr. Clement Wooldridge, whose death had resulted the previous day from taking arsenic. On the Wednesday deceased had applied to Mr. Parkes, chemist, to let him have some arsenic to kill a dog which was vicious. Mr. Parkes declined to let the deceased have it, although there was nothing extraordinary in his manner, except in the presence of a witness. Wooldridge went out and fetched a ginger-beer manufacturer, named Kelsall, to witness the purchase. On the Thursday morning, the sister of deceased found him vomiting, and sent for Mr. Folker, surgeon, who found in the deceased's room an empty paper marked "Arsenic—poison," and a mug in which was a sediment similar to the mixture supplied by Mr. Parkes, and which was stated to have contained half an ounce of arsenic.

#### FIRES.

A serious fire occurred at the warehouse and manufactory of Messrs. Wild and Crossley, dyers, Leeds, on the 23rd ult. It is estimated that the damage and loss of property cannot be valued at less than £10,000. The premises were insured in the Liverpool and London and Globe and Sun fire offices.

A serious fire broke out on the 17th ult. on the premises of Mr. Benjamin Atha, manufacturing chemist, of Hunslet, near Leeds. When the fire brigade arrived, the fire was raging in a long one-storey building, in which was stored oil and tallow, and after playing in and on this building for two hours with a good supply of water, the conflagration was subdued.

On the morning of the 21st ult. a fire was discovered on the premises which were occupied by the late Mr. Boothman, chemist and druggist, Kirkgate, Leeds. The fire, which originated in a boiler house, over which was a warehouse stored with chemicals, was soon reduced by the persevering efforts of the fire brigades, who were soon on the spot. The building was insured with the Liverpool and London, and the stock with the London and Lancashire.

Great alarm was recently occasioned by the discovery being made that the dispensary connected with the shop of Mr. T. Hudson, chemist, Thrift-street, South Shields, was on fire. The borough fire brigade were quickly on the spot, and commenced to play upon the burning premises; but some considerable time elapsed before the flames were extinguished. A quantity of drugs and instruments were destroyed, and great damage was also done to the premises. The cause of the fire is unknown, everything being apparently right when the shop was closed.

On the 20th ult. a fire occurred at Bradford, on the premises of Mr. Newsholme, chemist and druggist, of John-street and Northgate. It appears that Mr. Newsholme was engaged in heating a mixture of turpentine at a gas stove, when some of the liquid accidentally fell from the vessel into the stove. It instantly ignited, and the whole shop was soon in flames. An exciting scene ensued. Mrs. Newsholme, who was in an upper chamber, could not descend the staircase, and had to be rescued from a window. The stock was entirely destroyed, and Mr. Newsholme estimates the damage between £600 and £700. The cellars contained large quantities of inflammable material, which fortunately was not reached by the flames, or the result must have been of a far more serious character. Mr. Newsholme was insured for a small amount.

#### LAW AND POLICE.

##### DRAWING TEETH.

DENTISTS are very unreasonable if they expect their patients to come to them in an excellent temper. But though a little latitude may be allowed, the latter should exercise a little more control over their passions than did the defendant in the following case. At Bow-street, on September 17th, George Meyer, a foreigner, was charged with assaulting Mr. G. H. Jonas, of Great Russell-street, Covent-garden, chemist, under the following peculiar circumstances. Before any evidence was offered the defendant demanded to know if a foreigner could have his rights in this country. Mr. Vaughan informed him that there was no distinction between the foreigner and an Englishman here. The case then proceeded. It appeared that the defendant entered Mr. Jonas's shop and desired to have his tooth extracted. He was offered a seat, and when the complainant was about to commence the operation, the defendant glared at him, and then made a rush at him, striking him violently, but beyond that doing no severe damage. Complainant rang for his assistants, and with their aid and that of two police officers who were fetched, the defendant was conveyed with great difficulty, to the police station. The complainant believed that the defendant would have attempted to murder him, he was so strangely violent. Complainant gave him in charge, chiefly because he did not think that the defendant was in a fit state to be allowed to go at large. The defendant here broke out in a wild, incongruous statement. He said that when the complainant was about to pull out his tooth he recognised in him the "villain" who had stolen his property and whose dogs had bitten his children. The sight of the man was hateful to him, and he, therefore, swore he would kill him, smash him, and tear him to pieces. Mr. Vaughan requested the defendant to be calm, and asked him what property of his had been stolen by the complainant. The defendant replied, all kinds of property, such as wearing

apparel, food, etc., and directly he saw the complainant's dogs he knew they had bitten his child. The complainant said that he had dogs, but always kept them locked up. The defendant had, singularly enough, named a place where he (complainant) visited, but he never to his knowledge saw the defendant there. Mr. Vaughan told the defendant that he was evidently labouring under some hallucination, and ordered him to enter into his own recognizances in £20 to keep the peace in future towards the complainant. If his threats were continued, he would be made to find sureties for his good behaviour.

#### A CHEMIST'S MISTAKE.

At Clerkenwell, on Sept. 17th, Mr. Lloyd Rayner, chemist, druggist, and dentist, of 309, New North-road, Islington, was summoned before Mr. Cook, at the instance of Richard Faulkner, to answer the charge of having unlawfully sold oxalic acid, without the cover containing the same being distinctly labelled with the name of the article and the word "poison." Mr. Ricketts, solicitor, appeared for the defence. The complainant, who is a shoemaker, stated that on the 9th ult. he sent his son, a boy of about fourteen years of age, to the defendant's shop for a pennyworth of oxalic acid, an article which he used for putting a bright red on the heels of ladies' boots. When the boy returned, he was surprised to see that the packet was labelled "effervescent citrate of magnesia." He immediately went to the defendant, and asked him whether a boy had purchased a pennyworth of oxalic acid at his shop that day, and he replied in the negative. Witness handed him the packet of oxalic acid, and asked him whether the label containing the words "effervescent citrate of magnesia" had been sent out by him. The defendant examined the packet, and then, returning it to witness, said it was very probable that some citrate of magnesia had been sold by him. When witness drew his attention to the fact that the packet contained oxalic acid, the defendant said it was a mistake likely to occur, and that it was very easy to make such a mistake, as the printer sent in the labels all together, and sometimes one got mixed with the other. The defendant expressed no regret for what had occurred, and witness thought it was his duty to institute the present proceedings. In cross-examination by Mr. Ricketts the witness said he had no idea of receiving any pecuniary advantage by taking out the summons. Mr. Thomas Jones, surgeon, of 5, York-place, Islington, said that the packet produced contained oxalic acid. In answer to Mr. Cooke witness said there was enough in the packet to kill a child. Mr. Ricketts, on behalf of the defendant, said that his client denied selling the poison, but after the sworn testimony of the complainant he was bound to admit that if it was sold at the defendant's shop a wrong label had been placed upon the packet. The labels frequently got mixed before they came into the defendant's possession. Several medical gentlemen were then called, who gave the defendant an excellent character for the last fourteen years, and who stated that he was most careful in the performance of his duties.—Mr. Cooke said it was much to be regretted that a man who had received such a high character as the defendant should sell oxalic acid and label it citrate of magnesia. Oxalic acid was a poison likely to cause death, and, if such had been the case, the defendant might have been tried for manslaughter. It had been stated that his mistake had been made through the labels having been accidentally mixed by the printer, but if it was known that this was a frequent occurrence chemists ought to be more careful. He should not be doing his duty if he did not inflict the highest penalty, and the defendant would have to pay a fine of £5, or, in default, suffer two months' imprisonment. The fine was immediately paid.

#### CHARGE OF MURDER AGAINST A CHEMIST.

On the 26th September, at the Rotherham Police-court, Mr. William Collinson, chemist and druggist, of Rotherham, was brought up on remand, charged with having caused the death of Eliza Utley, twenty-seven years of age, by using an instrument with intent to procure abortion. Mr. Edwards, the solicitor for the prosecution, stated that the prisoner had hitherto been charged merely with using an instrument with intent to procure abortion, but now he would ask the Bench to commit the prisoner on a charge of murder. Should death be caused by anyone while in the

act of committing a felony, it constituted the crime of murder; and in the present case the prisoner had been charged with attempt to procure abortion, which of itself was a felony, and the woman Eliza Utley had since died. The evidence adduced before the coroner's jury was then given, to the effect that the deceased made a dying declaration to the effect that she was pregnant by the prisoner, that she went to his shop, where, in a back room, he performed the operation upon her, and that she was subsequently prematurely delivered of a dead child, which she managed to get conveyed to an ashpit. She died on the 14th of September from peritonitis, brought on by miscarriage. At a post-mortem examination no marks of violence were found on the body of the deceased. At the coroner's inquest the jury returned a verdict of "Man-slaughter" against the prisoner. On behalf of the prisoner Mr. Whitfield, his solicitor, contended that though, technically speaking, a charge of murder might be preferred against him, yet, as a matter of practice, it ought not to be. After a very brief consultation, the Bench committed the prisoner to the next Leeds Assizes on a charge of murder. Bail was applied for and refused. The hearing of the case, a lengthy one, caused much excitement in the town, and the court was thronged.

#### A CHEMIST FINED.

At the Leeds Police-court, on the 27th ult., Mr. H. C. Kemplay, chemist, was fined 20s. and costs for refusing to have his child, nearly six months old, vaccinated.

#### A QUACK DOCTOR.

Thomas Parfitt by name, who combined the ancient trades of barber and "dealer in medicines" at Monmouth, has been committed on the coroner's warrant for causing the death of George Henry Symonds. The deceased was an infant six months old, and the coroner's jury found that it had died from the effects of narcotic poisons sold by, and administered by the direction of the prisoner.

#### ASSAULT BY A CHEMIST.

At the Liverpool Police-court, Mr. Thomas Smyth, chemist and druggist, Islington, and his assistant Mr. F. J. Bird, appeared to answer a summons charging them with having assaulted Mr. Thomas Jones. Mr. Jones, the plaintiff, was a tenant of the defendant, Mr. Smyth, and in accordance with an agreement allowed Bird to have his meals in his apartments. On one occasion, Bird became abusive in his conversation, and called Mrs. Jones a bad name. Upon this, Mr. Jones very naturally remonstrated with him, but the latter rushed at him and struck him severely about the face and head. Subsequently, Bird acquainted his employer, Mr. Smyth, with what had happened, which induced him (Mr. Smyth) after some altercation also to assault Mr. Jones. In deciding the case, the magistrates stated that in the case against Bird the evidence was conclusive, and showed that he did commit an assault on Mr. Jones. However, he appeared to be sorry for it, and they should inflict the nominal fine of 10s. and costs. With respect to the assault by Mr. Smyth, they considered that he had acted most unjustifiably, and fined him, therefore, 20s. and costs.

#### OBITUARIES.

On the 3rd of October, in the 72nd year of his age, John Savory, Esq., formerly one of the partners of the well-known firm in Bond-street. This gentleman was born in 1800. He was educated for the medical profession, and after pursuing his studies in Paris in 1819, and afterwards as a student at St. George's Hospital, he became a Licentiate of the Society of Apothecaries in 1823. Having, however, relinquished practice, he joined his uncle, Mr. Thomas Field Savory, in the business in Bond-street, where he subsequently became the head of the firm of Savory and Moore. He was one of the founders of the Pharmaceutical Society, and President from 1844 to 1848 inclusive; but although the Act of 1852 separated him from that body, he always maintained a lively interest in its welfare. It is only within the last three or four years that he retired from the business in which he had for so many years taken

such an active interest. He was well known to the profession as a man of most active and persevering business habits, and he has left a large circle of friends, by whom he will be most deservedly regretted.

We have to record the death of Mr. John Duncan, of the celebrated firm of Duncan, Flockhart, and Co., chemists (of which Mr. Duncan was the founder), North Bridge, Edinburgh, which occurred on the 13th ult. Mr. Duncan was born in Kinross, and about the year 1796 commenced business in Perth, and in 1811 opened the premises in North Bridge. When Mr. Duncan commenced business, the system of labelling medicines was loosely carried out, and it is stated that he was the first in Scotland to carry it out with anything like perfection. Mr. Duncan was in his 92nd year, and was about the oldest member of the Pharmaceutical Society of Great Britain.

On the same date also died at Lerwick, in the Shetland Isles, Dr. Leeterhagh. This gentleman was the only chemist in those far northern islands.

We have to record the death of Mr. Robert Welbourn, of Derby, for thirty-six years the representative of Messrs. Schweppe and Co., soda-water manufacturers. The deceased was taken ill at Grantham, where he died on the 12th ult. Mr. Welbourn was 63 years of age, and held in high esteem in Derby.

## GAZETTE.

### BANKRUPTS.

COE, R. J., Great Yarmouth, Norfolk, soda water manufacturer.  
CUTHBERTSON, J., FORSTER, F. J., and MAWSON, WM., Regent-street, Newcastle-on-Tyne, glass bottle manufacturer.

### DECLARATION OF DIVIDEND.

COLLIER, W., jun., Hereford-street, Sheffield, manufacturing chemist, first and final dividend of 1s. on and after October 9 at Mr. Tasker's, 15, North Church-street, Sheffield.

### SCOTCH SEQUESTRATION.

GAFF, T., Stirling, chemical manufacturer.

### PARTNERSHIPS DISSOLVED.

ATKINSON, WILLIAM, and ATKINSON, RICHARD, Skipton, Yorkshire, druggists.

BOWER, E., and SIMPSON, J. W., Fenchurch-street, City, indigo merchants.  
BURDETT, H. F., and WALKER, S. E., Temple-row, Birmingham, surgeons.  
LAW, W. A., and STICH, H. J., Frampton Park-road, Hackney, sauce and vinegar makers.

SPENCE, J. B., KELLY, R. R., DUNN, J., and DUNN, P., Ellesmere Chambers, King-street, Manchester, merchants (so far as regards R. R. Kelly).

VANNER, WILLIAM, and HUGH WALLACE, New-road, Battersea-park, Surrey, manufacturing chemists.

WELLS, GEORGE, JAMES ISAAC, MARTIN TAYLOR, and JOSEPH EDWARDSON, Widnes, Lancashire, chemical manufacturers.

## Trade Memoranda.

Mr. G. S. TUCK, chemist and druggist, has purchased the business of the late Mr. Norrish, Fore-street, Tiverton, for the purposes of his trade.

The prospectus has been issued of a company to work a new match—the “Matchless”—and to buy the business of Mr. John Hynam. The company is to be called “The Chemical Light Company (Limited),” and the capital is fixed at £30,000. The principle of the patent to be purchased by the company we are told is the application to matches and other chemical lights (whether igniting on the box or otherwise) of an inexpensive solution which prevents the carbon from remaining a fiery mass for a single instant after the flame has been extinguished, thus rendering it so perfectly harmless that it may be thrown upon any matter, however combustible, without the slightest fear of setting it on fire, or of damaging it in any way.

Messrs. Moer and Baly, of Warwick, whose re-commencement of business we announced last month, have sent us some of their earliest specimens of work. The plasters are in every case beautifully spread, and are fit for any market. There are among the samples sent to us besides all the usual kinds which are to be found in the chemist's shop, a few not so commonly met with. Among these we may mention as

likely to be useful some Emp. Belladonna on moleskin, some Emp. Adhesiv. on black calico, and a new prettily tinted simple plaster called the *Dreadnought*, as it is made for the medical officers of that hospital ship. The careful and at the same time the spirited manner in which Messrs. Moer and Baly seem to have entered on their business will insure their success.

CAME OVER WITH THE NORMANS.—The origin of this word “puffing” is curious. In France, at one time, the *coiffure* most in vogue was called *pouff*. It consisted of the hair raised as high as possible over horse-hair cushions, and then ornamented with objects indicative of the tastes and history of the wearer. The Duchess of Orleans, for example, on her first appearance at Court, after the birth of her son and heir, had on her *pouff* a representation, in gold and enamel, most beautifully executed, of a nursery. There was the cradle, and the baby, the nurse, and a whole host of playthings. Madame d'Egmont, the Duc de Richelieu's daughter, after her father had taken Port Mahon, wore on her *pouff* a little diamond fortress, with sentinels keeping guard. Such is the origin of the word *puff*.

The half-yearly meeting of Price's Patent Candle Company (Limited) was held at the London Tavern on the 5th inst. The profits for the half-year to June last were rather less than in the corresponding period of 1870, but this would be explained. The profits for the half-year in 1870 were, in round numbers, £14,000, and in 1871 they had been £11,900, say £12,000. In the present half-year the wages had been more than in 1870, for in that half-year there were only twenty-five pay-days, while in the half-year for 1871 there were twenty-six; and this made a difference in wages alone of nearly £1,000. The cost of the replacements and repairs was £3,000 more than in 1870. There was a decrease of £1,240 for interest. The gross profit for the six months was £13,256 10s. 10d., from which was to be deducted £1,041 10s. 8d. interest on bonds, £67 8s. 2d. for new machinery and plant, and £200 for income tax, leaving the balance £11,947 12s. The dividend on the preference shares would absorb £1,037 4s. 1d., and there was then left to be carried forward £10,910 7s. 11d. After some discussion as to whether this course should be adopted, or whether a dividend should be declared, it was agreed to let it remain till the next half-yearly meeting, the business requiring more capital at this season than at any other time.

## Provincial and Foreign Reports.

[We shall be glad to receive from all parts of the world items of interest to our readers. Correspondents who favour us with reports of local meetings, etc., will please to condense them as much as possible; and when local newspapers are sent, we shall be glad to have the passage intended for our notice specially marked.]

### GLASGOW.

#### GLASGOW CHEMISTS' AND DRUGGISTS' ASSOCIATION.

THE annual general meeting of this Association was held in Anderson's University, 204, George-street, on Wednesday evening the 4th inst., Mr. Thomas Davison, President, in the chair. There was a good attendance of members. The minutes of last meeting having been read and confirmed, the secretary (Mr. G. M. Fairlie) was called upon, and read the annual report for the session 1870-71, which ran as follows:—

“Your Council has much pleasure in presenting an epitome of the proceedings of the Association during the past year. We have to regret that in point of numbers the papers delivered by members of the society were not so numerous as in some former years of the Association's existence, which may be accounted for from the fact that formerly members having no compulsory examinations before them found more time to practise the best mode of preparing particular preparations, or of testing for adulterations, etc., and that now members may think that if they prepare

themselves for their respective examinations they do very well, without turning their attention much to the modes of preparing the ointments of the British Pharmacopœia, or the purity and strength of aromatic spirit of ammonia, etc. We would respectfully remind the younger members, however, that this is as much part of their education as that of being able to detect unusual doses in prescriptions, or in being able to translate a Latin recipe correctly; and further, that our Association's meetings are as much a training school for students in pharmacy as the class-room or the laboratory. We sincerely trust, therefore, that the members will do all in their power to keep up the interest of our fortnightly meetings by some practical papers as well as by their attendance. While thus regretting the decline in the number of papers produced by members, yet we are proud to record that in every other respect the Association has made a marked improvement on any of its predecessors. The memberships have reached the large number of 136 (upwards of thirty of whom are employers). This increase of about fifty to the roll of memberships may be accounted for in several ways; first, the fact that we now hold our meetings in our own hall, and within the walls of Anderson's University; secondly, the very encouraging prospect the society has of being able to carry on special classes suited to the wants of pharmaceutical students, and that the provisions of the Pharmacy Act of 1868 render it compulsory that those desirous of connecting themselves with the business should have a certain standard of education; thirdly, the great assistance we have had from Drs. R. C. Moffat and D. C. Black, and Mr. Hennedy by lectures, etc., and the liberal support we have received financially at the hands of several of the wholesale houses in the city, especially the Glasgow Apothecaries' Company; and last, though not least, the fact that Glasgow chemists have at length been aroused to a due sense of their position in regard to pharmacy in the United Kingdom.

"The remodelling of the constitution was a necessary adjunct to the change in the place of meeting, and we trust the care bestowed on the compiling of the various rules may be felt and appreciated by their remaining the guide of future councils for many years to come.

"As usual, a syllabus of business was issued at the commencement of the session, which was very well adhered to throughout—fourteen meetings were held in all, Professor Hennedy taking up the first two with his lectures on the 'Histology of Plants.' Dr. Moffat's three lectures were of the usual interesting and instructive nature. The event of the session, however, was, without doubt, the address by Dr. Campbell Black on the 'Relation of Prescriber to Dispenser.' This address was published in full in the *Pharmaceutical Journal*. Several of the medical journals favourably criticised its contents, and gave extracts from it, and 400 copies were printed and circulated by your Association, which speaks largely for the interest it created, not only in and around Glasgow, but throughout the whole country; and we believe it has been the means of bringing before the country, more prominently than anything else, the anomalous position in which the dispenser is placed in and around this large city; and we hope the day is not far distant when we shall have an entire separation of the two professions.

"The papers read by the members of the Association, and the discussions which took place at the several meetings will, we think, compare favourably with those of any other association in the country of similar pretensions. One member deserves special mention, he having prepared two very practical papers, and passed two of the society's examinations in the course of the session, an example worthy of imitation.

"We are glad to record that the annual festival, which had been so successful on former occasions as a social gathering, came off this year with its usual success; but we trust some other course may be adopted in future years, whereby all may enjoy themselves in a harmless way, and at the same time raise ourselves as an educated body above the common mode of trade gatherings.

"The discussion on the proposed 'Poison Regulations' was also a feature in the business of the session, and we were glad to notice that the example set by your society of 'actions not words' was followed by other associations throughout the country, and that their combined action had

the effect of causing the Council of the Pharmaceutical Society to withdraw the compulsory part of the regulations. This, however, we are sorry to say did not complete the agitation on the question. At the annual meeting of the Pharmaceutical Society, held in May last, the question was again brought up, and but for the determined efforts of Mr. Mackay, of Edinburgh, and other leading gentlemen in connection with the society, it is just possible they may have been forced upon us by a 'side wind.' But even this defeat did not put an end to the question. Through some misleading idea on the part of the Medical Officer of the Privy Council, backed, we are sorry to say, by several influential and much respected gentlemen in connection with the Pharmaceutical Society, or, perhaps, a determination on the part of some members of the present Government to lay down certain rules for our guidance, a bill was introduced into Parliament, the history of which is no doubt known to all, suffice it to say that in Glasgow we had two very successful meetings of the trade, attended by both town and country members, at which no uncertain sound was given regarding this question, and out of which sprung the 'West of Scotland Chemists' Defence Association.' This body sent a deputation to London, also a petition against the bill signed by sixty-five registered chemists situated in the city within eight hours' time, besides circulars, addresses, and memorials to the trade in Scotland, and to all the members of Parliament. The thanks of the trade are due to the executive committee of this Association, to the members of the trade in Scotland, who subscribed so liberally to its funds, to the London and Manchester Defence Associations for their invaluable aid, to William Graham, Esq., M.P., and other members of Parliament, for the influence they exercised with the Government in inducing them to withdraw the obnoxious bill.

"We sincerely hope that compulsory regulations for the storing of poisons are among the things of the past, but should they come up again our opponents must know that we are prepared to fight the battle over again if need be.

"In referring to these matters we have departed from the usual course of giving simply a record of the transactions of the society, but they are so intimately connected with ourselves as individuals, that we thought it would be out of place not to refer to them on this occasion.

"Returning to the business of the society, we have next to mention the botany class commenced in the spring of the year, and conducted by Professor Hennedy. Twenty-eight members came forward and joined the class, and so far Mr. Hennedy speaks favourably of them. The class will be resumed on the first Monday in November for preparation for the Science and Art Examinations, but until these occur in May next, we cannot speak confidently of the progress that may be made.

"We have no record at present of the numbers belonging to the Association who have passed the various examinations of the Pharmaceutical Society; we know, however, we are still behind many of the larger towns in England in this respect; but we trust ere long to stand on a par with our brethren of Liverpool and Manchester, and the fact that a large number of employers in and around Glasgow became members of the Pharmaceutical Society in course of the year, and that we have now a representative in the Council of London in the person of Mr. Frazer, augurs well for our future prospects.

"The dispensing price-list issued by your Association has been freely circulated throughout the trade, and we are glad to notice that very many of the most respectable houses have adopted both the trade-mark and prices. We would just once more earnestly request that any who have not yet done so will help us on in this good work, by marking every prescription as dispensed. Our trade mark, 'Mel Boracis,' is well known throughout the country, and there is no reason why every chemist in the kingdom should not adopt it, so that a universal price mark and prices might be the rule.

"The delegates from your Association who attended the British Pharmaceutical Conference meeting at Edinburgh, report a successful meeting, and your Council wish all success to the Conference.

"We have also to acknowledge the receipt of the book of autograph prescriptions, prepared by Mr. Joseph Luce for

Your Association, and your Council recommend that a special vote of thanks be given that gentleman for the interest he has taken in us of late.

"The increased subscription which commences this session inaugurates another new era in your society's history. We earnestly hope it will not deter any from becoming members, but rather act as a stimulant to all who are already such to do everything they can to increase that membership.

"As regards the prospects for the ensuing session, they are very bright. The commencement of chemistry and Materia Medica classes may be announced very soon, and it is hoped the members will encourage this movement by every means in their power. The change of treasurer which was necessitated in course of the session, was a source of grief to your Council; but it is hoped that you will select gentlemen for the various offices this year who are likely to keep office for the whole of the session. It is expected that Mr. Stanford, of the British Seaweed Company, will deliver the inaugural address, and several of our own members have already given notice of their intention of reading papers, several discussions will take place on pharmaceutical matters on which there exists a difference of opinion, and it is hoped members will read up for these. The long business hours have long been felt a great barrier to any real progress being made, either in educational or other pharmaceutical matters. The committee appointed in course of the session to endeavour to bring about some improvement in this respect went heartily to work at first, but circumstances over which your Association had no control, prevented any active measures being carried out. One point, however, was elicited in course of the canvass made, viz., that very many employers were most anxious for some reform being made in this direction. We want, however, unanimity; if that could be gained a lasting boon would be secured to both masters and assistants.

"In conclusion, we have already spoken a word of advice to the younger members, let us again urge upon you the necessity for persevering in your studies; you have advantages which very many of your employers never had; then see that you make a good use of them. You will certainly find difficulties to contend with, but success is always the award of perseverance; and though you may not accomplish much at first, bear in mind that great things have invariably small beginnings. The largest river in the world, we are told, takes its rise as a mountain spring; the giant oak was once a slender twig; the universe, we know, is made up of molecules and atoms. Let us, then, make our beginning, and let us perform our part, however humble, nothing daunted; above all, let us be united in our aims, we have a common cause, the advancement of our profession. It is a noble one, and great will be our reward if we perform our part aright."

The financial statement was then read as follows:—

#### RECEIPTS.

	£	s.	d.
Balance from last year .. ..	5	6	1½
Donations of 10s. and upwards ..	11	14	6
Subscriptions from 136 members ..	9	15	0
Botany class, fees, books, etc. ..	10	8	6
Source account .. ..	44	14	6
<b>Total ..</b>	<b>£81</b>	<b>18</b>	<b>7½</b>

#### EXPENDITURE.

	£	s.	d.
Hall rents, etc. .. ..	9	17	6
Printing accounts .. ..	9	19	6
Postages, etc. .. ..	2	4	3
Botany class .. ..	11	11	3
Source account .. ..	43	8	0
Balance in hand .. ..	4	18	1½
<b>Total ..</b>	<b>£81</b>	<b>18</b>	<b>7½</b>

Audited and found correct, showing a balance in treasurer's hands of £4 18s. 1½d.

(Signed) JOHN FENWICK, } Auditors.  
W. S. GALBRAITH, }

Glasgow, 4th October, 1871.

After some questions had been asked and answered by the secretary, Mr. John Black moved the adoption of the reports, which was seconded by Mr. William Whyte, and unanimously agreed to.

The following gentlemen were then elected officers for the ensuing year, viz.:—

President, Mr. Thomas Davison; Vice-President, Mr. R. Brodie; Treasurer, Mr. William Young; Secretary, Mr. G.

M. Fairlie; Council, Messrs. Daniel Frazer, John Jaap, A. Kinninmont, John Black, Wm. Whyte, A. E. Johnstone, John K. Fenwick, A. Paterson, J. C. Clark, A. Gardner, J. L. MacMillan, and Dr. R. Carter Moffatt; Auditors, Messrs. John MacMillan and R. T. Dun.

It was afterwards agreed that the annual general meetings be held in April in future, instead of October as hitherto.

The Secretary was then instructed to convey to the Glasgow Apothecaries' Company and Mr. Joseph Ince, of London, the best thanks of the Association for their donations.

Motions were tabled for next business meeting to alter the name of the Association from the "Chemists' and Druggists'" to the "Glasgow Pharmaceutical Association," and "that the Council be instructed to make application for a grant of money to the Council of the Pharmaceutical Society in London for this Association."

After a few remarks by the Chairman, Messrs. Kinninmont, Paterson, and others, the proceedings terminated.

## LIVERPOOL.

### LIVERPOOL CHEMISTS' ASSOCIATION.

#### Annual Meeting.—Session 1870-71.

THE annual meeting was held at the Royal Institution, September 28th, 1871. The President, Mr. JOHN ABRAHAM, in the chair.

Mr. Robert Jennings was elected a member, and Messrs. George H. Damsell, Thomas Banner, jun., and Henry S. Sheldermine were elected associates of the Association.

The Hon. SECRETARY then read the annual report.

#### ANNUAL REPORT.

In laying before you the twenty-second annual report, your Council have still cause to congratulate you upon the continued usefulness of your Association.

During the past session ten members and six associates have been elected; ten have resigned, or by death or removal have ceased to belong to our ranks, leaving 127 at present on the roll.

The chemistry classes, in connection with the school of pharmacy, have been conducted by Mr. Edward Davies, F.C.S., etc., and his report gives your Council great encouragement for the continuance of them. The Materia Medica and botany classes, conducted by Dr. Carter, B.Sc., F.R.C.S., your Council regret have not been so well attended. The chemistry classes will be continued during the winter months by Mr. Davies, whose attainments and ability in teaching gives an assurance of the greatest efficiency, and your Council will make arrangements for holding Materia Medica and botany classes during the spring and summer months.

The papers read at the fortnightly meetings have attracted considerable interest, and much information has been elicited during the discussions which followed. The majority of subjects have been connected with scientific chemistry. Your Council will be glad to receive papers during the ensuing session upon subjects more intimately connected with pharmacy, Materia Medica, and botany; they also invite more miscellaneous communications from members who have not yet advanced the interests of the Association by assisting its objects in this way, and short papers by those who do not wish to occupy the entire evening.

Your library has been enriched during the past session by the appropriation of the grant from the Bell and Hill's fund; a valuable collection of MSS. prescriptions from Joseph Ince, Esq., F.C.S., F.L.S., etc., of London, and several other important contributions, and your Council congratulate the Association upon the fact, that the library is so well stored with standard works upon chemistry, Materia Medica, botany, and pharmacy, that it was found difficult to determine what books could be advantageously added, and they are mainly indebted to Professor Attfield for the selection. The librarian reports that many members have availed themselves of the advantages of these valuable stores. 300 books have been taken out during the session, and several applications have been made for the leading

works, which could not be met, and your Council are glad to find that the library is of great service to members who make constant use of it for reference.

Your Association was invited to send a deputation to meet the committee of the Liverpool School of Science, to discuss the advisability of establishing a science college in Liverpool, your Council appointed at deputations, but nothing definite has resulted.

In compliance with the instructions of an ordinary meeting of the Association, your Council called a meeting of the chemists and druggists of Liverpool on the 10th of March, "To consider the proposed compulsory regulations for the keeping, storing, and dispensing of poisons," at which resolutions were adopted adverse to compulsory regulations, and they were forwarded to the President of the Pharmaceutical Society.

The funds of your Association has been enriched by the liberality of the local committee of the British Pharmaceutical Conference, and this enabled your Council to hold their eleventh *conversazione*, at which about 400 members and friends of the Association assembled. Your Council are indebted to Professor Roscoe, F.R.S., for his exhaustive lecture up on "Solar Chemistry," illustrated throughout by numerous beautiful experiments; to Mr. Edward Davies, F.C.S., etc., for his interesting and illustrative lecture upon "Modern Explosive Compounds;" to Mr. Albert H. Samuel for his illustration of "Tyndall's Theory of the Cause of the Blueness of the Sky," and to the several microscopists and contributors of scientific novelties, etc., which enabled your Council to entertain their guests in such a manner as to make this one of the most successful *conversazioni* ever held by the Association.

Your Council were invited to send delegates to the meeting of the British Pharmaceutical Conference at Edinburgh in August, and Messrs. Snaw, Mason, and Dr. Edwards attended as a deputation from your Association.

The following members of Council retire by rotation, and are eligible for re-election:—Messrs. Abraham, Redford, Shaw, and Sumner.

Your Treasurer will present a report of the finances of the Association, which shows a credit balance of £9 4s. 10d.

The Treasurer read the financial report.

#### FINANCIAL REPORT.

The Liverpool Chemists' Association in account with JOHN SHAW, Treasurer. Session 1870-1871.

Cash received.			
102 Members' Subscriptions .. .. .	£	s.	d.
5 Members' Subscriptions Arrears .. .. .	51	0	0
2 Members' Subscriptions Half-Session .. .. .	2	10	0
14 Associates' Subscriptions Half-Session .. .. .	0	10	0
Balance from Local Committee of Pharmaceutical Conference .. .. .	3	10	0
Microscopic Fees .. .. .	32	15	4
Library Fines .. .. .	0	2	6
	0	3	1

£90 10 11

Cash paid.			
Balance from 1870 .. .. .	£	s.	d.
Rent .. .. .	14	15	3
Tea, Coffee, and Attendance .. .. .	10	10	0
Insurance .. .. .	10	11	2
Books and Periodicals .. .. .	1	0	0
Printing and Stationery .. .. .	4	2	11
Directing and Delivering Circulars .. .. .	12	14	6
Collector's Commission .. .. .	6	8	2
Librarian .. .. .	1	18	9
Balance of Expenses of Conversazione .. .. .	4	0	0
Expenses calling Meeting in reference to proposed Poison Regulations .. .. .	12	2	10
Secretary's Expenses .. .. .	1	16	2
Balance in hand .. .. .	1	6	4
	9	4	10

£90 10 11

Examined and found correct, September 28th, 1871.

ALBERT HENRY SAMUEL, } Auditors.  
CHARLES SHARP, }

Mr. CHARLES JONES moved "That the report as read be adopted, and together with the transactions of the general meetings, the laws and by-laws, the catalogue of books in the library, and the list of members, be printed and circulated among the members." He was pleased to hear that the classes in connection with the School of Pharmacy had increased, in comparison with former sessions, and as it was the principal part of the business of the Association to provide classes for pharmaceutical students, he hoped they would continue to avail themselves of these advantages. He congratulated the members upon being in possession of

so valuable a library, to which he hoped they would soon be able to add Sowerby's "Botany."

Mr. ALFRED E. TANNER seconded the resolution, which was carried unanimously.

The meeting then proceeded to the election of four members of Council in place of Messrs. Abraham, Redford, Shaw, and Sumner, who retired by rotation.

The result of the ballot was that the retiring members were re-elected.

The PRESIDENT stated that at the end of the session Mr. Davies invited the students in the chemistry class to attend voluntarily a written examination. The result of this was so gratifying that he and Mr. Davies had decided to award prizes to the two students who obtained the highest number of marks; he had therefore much pleasure in presenting the first prize, Pereira's "Materia Medica," to Mr. Abbot, the second, Bowman's "Practical Chemistry," to Mr. Jackson.

Mr. REDFORD moved "That the best thanks of this meeting be given to the donors to the library and museum, and to the authors of papers during the past session."

Mr. F. TAYLOR seconded the motion; carried unanimously.

Mr. CHARLES BLOOD moved "That the best thanks of the meeting be given to the officers and Council for their valuable services during the past session."

Mr. T. F. ABRAHAM seconded the motion; carried unanimously.

The PRESIDENT, TREASURER, and SECRETARY, returned thanks.

A discussion arose upon the desirability of having a collection of MSS. prescriptions in the library. The Secretary referred to Dr. Syme's proposal of last session to fill up a book, if the Council provided one; it was finally decided to lay the matter before the Council, and announce their decision upon the circular calling the ordinary meetings.

A vote of thanks to the Chairman having been carried by acclamation, the meeting separated.

#### NORWICH.

##### NORWICH CHEMISTS' ASSISTANTS' ASSOCIATION.

The Annual Meeting was held on September 25th, the President, Mr. Alfred Hill, in the chair. The financial report was as follows:—

Dr.			
Forty-two Members' Subscriptions .. .. .	£	s.	d.
Nineteen Honorary Members' ditto .. .. .	22	1	0
Donations .. .. .	9	19	6
Donation for Books from Thomas Hyde Hills, Esq. .. .. .	15	18	0
Library Fines .. .. .	5	5	0
Fees from Latin Class .. .. .	1	17	8
	2	9	6

£55 15 6

Cr.			
Rent .. .. .	£	s.	d.
Rates .. .. .	10	0	0
Furnishing .. .. .	2	10	0
Gasfitting .. .. .	16	12	10
Gas and Firing .. .. .	2	7	6
Cleaning .. .. .	1	17	8
Printing, Stationery, and Postage .. .. .	2	18	8
Books .. .. .	1	17	8
Chemicals and Apparatus .. .. .	5	6	11
Materia Medica Specimens and Bottles .. .. .	2	10	6
Sundries .. .. .	1	14	8
Latin Text .. .. .	0	3	9
Balance in hands of Treasurer .. .. .	4	5	0
	3	10	2

£55 15 6

Examined and found correct, R. C. PITTS, } Auditors.  
W. J. GARDINER }

* LIST OF DONATIONS.			
Messrs. Smith and Sons .. .. .	£	s.	d.
Mr. R. C. Pitts .. .. .	2	2	0
Mr. F. Sutton .. .. .	2	0	0
Mr. R. Fitch .. .. .	1	1	0
Mr. A. J. Coley .. .. .	1	1	0
Mr. Robinson (annual) .. .. .	1	1	0
Mr. Row .. .. .	1	1	0
Messrs. Cubitt and Son .. .. .	1	1	0
Mr. G. F. Watson .. .. .	1	1	0
Mr. J. English .. .. .	1	1	0
Mr. William Rackham .. .. .	1	1	0
Mr. James Watson .. .. .	1	1	0
Messrs. Andrews Bros. .. .. .	1	1	0
Mr. Grimditch .. .. .	0	5	0

£15 18 0

The Vice-President, Mr. E. Nuthall, then drew the attention of the meeting to the fact, that the amount paid by the members of the Latin class fell far short of that which had been paid to the tutor by the Association, and stated that this deficiency was mainly caused by four members declining to pay the fees. Mr. F. D. Smith said that his presence there that night was owing to his desire to clear up a misunderstanding which evidently existed between the Council and the four members just mentioned. These latter were in his employ, and they stated that they did not feel themselves called upon to pay any fees beyond the annual subscription to the Association, as when the Association was formed it was stated that Latin would be included among the subjects taught by the Association. Mr. Nuthall related in full the history of the Latin class, stating that such a class had been started by a member of the Association, but as the pupils expressed preference for a paid tutor, and offered to pay extra fees for the same, the Council entered into an engagement with Mr. Lowe. Before the commencement of each course the students were informed what fees would be required of them, and he maintained that it was scarcely justifiable for any of the gentlemen to take advantage of the class, and then decline to pay. These statements being borne out by the members of the Latin class present, after further discussion Mr. Smith declared himself satisfied that the young men ought to pay unless they were willing to be considered as defaulters. The following reports were next received:—

#### REPORTS TO THE SECRETARY.

##### *Materia Medica Class.*

Dear Sir,—I am happy to be able to give a very satisfactory report of this class, which met during the past winter months. The members were attentive and well conducted. The class assembled nineteen times, and the average attendance was sixteen.—Yours very truly,

A. J. CALEY.

##### *Botanical Class.*

Sir,—Eighteen evenings during the past winter and spring were devoted to this class; at first it was well attended, and considerable interest displayed by those present, but towards the close the numbers fell short of what was anticipated. The average attendance was rather above thirteen.

The course of botanical studies embraced both structural and general botany, as also a description of the natural orders required by the Council of the Pharmaceutical Society.—Yours truly,

OCTAVIUS CORDER.

##### *General Chemistry Class.*

The General Chemistry Class, which was held during the winter months, met twenty times, and the average attendance was twelve. At the outset the number of students was much larger; but as the charm of novelty wore off, and it became apparent that the class supplied but little assistance for a "minor cram," the attendance diminished.

To those few who attended the entire course great praise is due for their application.

The course comprised chemical physics, the practical consideration of specific gravity, the laws of combination by weight and volume, chemical nomenclature and notation, the properties of the gaseous elements and of the metals of the alkalis and alkaline earths, together with practical testing for the latter.

E. NUTHALL.

##### *Latin Class.*

Sir,—The Latin Class met during the first six months of the present year, and the course consisted of those subjects required for the preliminary examination, but only three students were sufficiently prepared to enter for it. The class nominally consisted of eleven pupils, but after the passing of the three gentlemen mentioned, only six members were left, two having discontinued their attendance.

Yours sincerely,

ALEXANDER LOWE.

##### *Library Report.*

Sir,—The library has been open thirty-six times, for the purpose of renewing and exchanging books, since the first issue on February 27th.

It at present contains sixteen volumes, which have been circulated among nineteen members. I find that such books

as Attfield's "Chemistry," Bentley's "Botany," etc., which are best adapted to the requirements of those preparing for the Minor Examination, are preferred by the majority of members, as it is frequently necessary for these to give notice, in order that a book may be secured.

The by-laws relative to the library and museum, I believe, meet with general satisfaction. It is my opinion, judging from the manner in which it is appreciated, that the library of this Association has already proved beneficial.

Yours truly,

FRANK HENRY ELLWOOD.

#### SECRETARY'S GENERAL REPORT.

In addition to the regular classes, other sources of instruction have been provided, consisting of three lectures by Mr. F. Sutton, on chemistry; four on Pharmacopœia tests, by Mr. A. J. Caley; and three on chemistry, by Mr. Nuthall. A monthly botanical gossip, conducted in the spring by Mr. O. Corder, was discontinued, in consequence of inattention displayed by members. Three pharmacy gossips were also conducted by Mr. Nuthall.

Very few members have passed examinations during the past year (namely, one the Major, two the Minor, and four the Preliminary). This is accounted for by the fact that the senior members, with one or two exceptions, had passed either the Minor or Modified Examinations before the formation of this Association. But we may reasonably expect that many of the apprentices will be enabled to get through during the ensuing year.

There is another source of information which I regret to see almost uniformly neglected. Through the kindness of several members and honorary members we have a large collection of loan books for use on the establishment; but these are rarely removed from the shelves, the members not yet having learned to consider this as a reading-room after class hours.

Besides the donations noticed in the treasurer's report, the following donations, etc., have been received:—

A grant from the Pharmaceutical Society of £8 8s., for the purchase of botanical and chemical diagrams, the same remaining the property of the Pharmaceutical Society for three years.

The *Pharmaceutical Journal*, from the Pharmaceutical Society.

Engravings of the late Dr. Pereira, William Allen, and Jacob Bell, from Thomas Hyde Hills, Esq.

Valuable Book of Prescriptions, from J. Ince, Esq.

A collection of loose prescriptions, from Mr. Fox, Leamington.

Ditto, from Mr. Atmore, King's Lynn.

A collection of chemicals, from Mr. Robinson, Orford-hill. Several *Materia Medica* specimens, from Messrs. Caley and Corder, London-street.

Several books, from Mr. N. Lincoln.

Volumes (bound) *Pharmaceutical Journal*, from Mr. J. English.

Mr. F. D. Smith said that after the account of so much work done, he felt compelled to propose a vote of thanks to Messrs. Sutton, Caley, Corder, and Nuthall, who had given up so much time for the various classes and lectures. Seconded by Mr. Neal. Mr. De Carle moved a vote of thanks to the honorary members, to whom the success of the Society, in a pecuniary aspect, was to such a great extent due. Seconded by Mr. T. C. Pitts. Mr. Smith, in acknowledging the same, said that however much the financial success was owing to the support of the honorary members, the ultimate success depended upon the young men themselves, and he expressed a hope that during the ensuing year the attendance of students would be larger and more regular than exhibited in the report. Thanks were also passed to the donors, the librarian, and the auditor. The President now explained that the object of holding this meeting a week before its proper time was to ascertain whether the members were desirous of carrying on the Association another year. He thought that the falling off in attendance, which had been noticed, indicated a lack of interest on the part of the members, and unless there secured a prospect of a change in that respect, he thought they would scarcely be justified in asking the honorary members to continue their subscriptions. It was unanimously resolved to carry on the Society. The President then stated that although the present Council would retain

their functions until the end of the month, it was thought advisable to elect their successors at the present meeting. The following gentlemen were then elected officers for the ensuing year:—President, Mr. Alfred Hill; Vice-President, Mr. Edwin Nutball; Treasurer, Mr. W. J. Gooch Butler; Secretary, Mr. George C. Fox; Council—Mr. Canham, Mr. Goodenough, Mr. Ellwood, Mr. Lincoln, Mr. Martin. After a spirited discussion, and various divisions, it was resolved that the class teachers be requested to restrict their subjects to those required for the Minor Examination; that the rooms be open three nights a week in the winter months; that the preliminary class be held at the rooms; and that the pupils of the latter class be assisted in engaging a tutor, as far as possible, from the funds of the Association. After a vote of thanks to the Chairman, the meeting separated.



F. (Maidstone) sends us the literal copy of an order received by him. "3 Peneth of Crotch Needle from chemest," which, on inquiry, proved to be cochineal. Another correspondent in the West of England also sends a specimen of original orthographical ingenuity. On a small slip of paper which was accompanied with a bottle and twopence, are inscribed the words:—"Eke peke quke anna wine."

Clapton. (1.) A person who passed the Modified Examination is entitled to call himself "chemist and druggist by examination." (2.) But though a modified examination was instituted as an "act of grace," there was really no occasion to go further and grant a diploma. (3.) Undoubtedly you can offer yourself for election to the Council of the Pharmaceutical Society.

Inquirer. A registered chemist and druggist may commence business anywhere in Great Britain without asking permission from anybody.

Messrs. Taylor and Son, family grocers, teadealers, provision merchants, and Italian warehousemen, of Skelton-in-Cleveland, announce at the end of an advertisement in a local paper, that "all kinds of pills usually sold by chemists at 1s. 1½d. are sold by us at 10½d. per box, including Holloway's, Kaye's, Rook's, Clayton's, etc., etc." We should recommend the druggists in that neighbourhood *by no means* to deal in packet teas. Certainly not.



The following list has been compiled expressly for the CHEMIST AND DRUGGIST, by L. de Fontainemoreau & Co., Patent Agents, 4, South-street, Finsbury, London; 10, Rue de la Fidélité, Paris; and 33, Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

1846. A. A. Croll, of Coleman-street. Improvements in the treatment of ammoniacal liquor to obtain salts of ammonia. Dated 29th March, 1871.
1849. J. B. Spence and P. Dunn, of Manchester. Improvements in the treatment of natural phosphates of alumina, for the purpose of obtaining sulphate of alumina and phosphoric acid, or compounds thereof. Dated 15th June, 1871.
1849. J. Duncan, of Mining-lane, and J. Sterhouse, of Pentonville. Improvements in the manufacture of sugar, and in the treatment of saccharine solutions. Dated 20th June, 1871.
1851. R. Mosbey, of Dumbur, Clackmannan, N. B. Improvements in treating ozonized to obtain spirit, and in distilling. Dated 23rd June, 1871.
1853. T. G. Smith, of London. An improved process for the revivification and recovery of the potash, soda, and organic compounds remaining in lyes and soaps after they have been used for the treatment of woody and other fibre and fabrics. Dated 3rd July, 1871.
1891. J. A. Wanklyn, of Harrington-street, Hampstead-road, and W. E. Hoyle, of Hendon, Middlesex. Improvements in the preservation of milk. Dated 16th July, 1871.
1891. A. Tessier, of Grandville, France. An improved process of manufacturing soda from wreck. Dated 13th July, 1871.
1897. W. G. Valentin, of Oxford-street. Improvements in the peroxidation of oxide of manganese recovered from chlorine residues. Dated 13th July, 1871.

1846. A. M. Clark, of London. Improved medicinal compounds for the treatment of cancer and other diseases. Dated 14th July, 1871.
1850. A. G. Brown, of Southwark. Improvements in means of disinfecting water-closets, urinals, as well as gutters, and other conduits and apparatus therefor. Dated 17th July, 1870.
1908. H. Doaeon, of Appleton House, near Warrington, Lancaster. Improvements in the manufacture of sulphate of soda, and of sulphate of potash, and of chlorine, and of bleaching powder. Dated 21st July, 1871.
1917. J. Fordred, of Blackheath, Kent. Improvements in treating and purifying yeast. Dated 21st July, 1871.
1918. W. Hunt, of Castleford, near Normanton, York. Improvements in the manufacture of chlorate of potash, and in apparatus to be employed for that purpose. Dated 21st July, 1871.
1920. J. Hargreaves, of Appleton-within-Widnes, and T. Robinson, of Widnes, Lancaster. Improvements in the manufacture of sulphuric acid and sulphates, and in apparatus employed therein. Dated 21st July, 1871.
1928. J. Hargreaves, of Appleton-within-Widnes, and T. Robinson, of Widnes, Lancaster. Improvements in the manufacture of sulphates, and in preparing materials, and in apparatus to be employed therein. Dated 22nd July, 1871.
1947. E. G. Brewer, of London. Improvements in belts to be worn to prevent sea-sickness and for other purposes. Dated 25th July, 1871.
1955. J. D. Morrison, of Edinburgh. Improvements in purifying water or other solvents, so as to qualify them to purify other bodies by simultaneous and continuous filtering, and simultaneous and continuous distilling apparatus. Dated 25th July, 1871.
2008. W. Weldon, of Putney, Surrey. Improvements in obtaining sulphur from sulphuretted hydrogen, and in manufacturing soda and potash. Dated 31st July, 1871.
2122. J. Young, of Limefield, N.B. Improvements in the manufacture of soda, otherwise known as the carbonate of soda. Dated 11th August, 1871.
2123. J. Young, of Limefield, N.B. Improvements in the treatment of hydrocarbon oils. Dated 11th August, 1871.
2024. C. Crookford, of Holywell, Flint. Improvements in the production of the alkalis and their salts, and the treatment of metallic ores. Dated 1st August, 1871.
2028. J. T. Way, of Kensington. Improvements in the manufacture of phosphates of soda and potash. Dated 1st August, 1871.
2040. W. J. Curtis, of Holloway. Improved means of, and apparatus for, obtaining extracts or infusions from vegetable or other substances, and filtering or clarifying liquids. Dated 2nd August, 1871.
2056. D. C. Knab, of Paris. Improved means of treating animal and fish refuse for making manure, and for extracting fatty and other substances of commercial value. Dated 3rd August, 1871.
2080. B. Tanner, of New Brighton, Chester. Improvements in the manufacture of phosphoric acid and phosphorus. Dated 7th August, 1871.
2086. R. Scott, of West Calder, Midlothian, N. B. Improvements in treating mineral and other oils, and in apparatus therefor. Dated 8th August, 1871.
2090. J. Duncan, of Mining-lane, J. A. R. Newlands, of Brixton, and B. E. R. Newlands, of Charlton, Kent. Improvements in the treatment of saccharine solutions in the manufacture of sugar. Dated 8th August, 1871.
2134. J. Anderson, of New-buildings, Londonderry, Ireland. Improvements in reducing oxides, and in obtaining iron, sodium, potassium, phosphorous chlorine, or their compounds, and in apparatus therefor. Dated 14th August, 1871.
2168. J. H. Johnson, of London. Improvements in the treatment of animal and vegetable fibres, and in the apparatus employed therein, with a view to the cleansing of the same, and obtaining oily, resinous, and gummy products therefrom. Dated 17th August, 1871.
2200. R. C. Moffatt and A. McLaren, both of Glasgow. Improvements in treating mineral and other oils, and in recovering sulphuric acid therefrom. Dated 22nd August, 1871.
2201. J. Salter, of Newport, Monmouth. Improvements in surgical trusses, suitable for various kinds of ruptures. Dated 22nd August, 1871.
2215. J. Shore, of Parkgate, Rotherham, York. An improved apparatus for tapping and "venting" casks, barrels, or other similar vessels. Dated 23rd August, 1871.
2216. J. Anderson, of New-buildings, Londonderry, Ireland. Improvements in furnaces, apparatus, or arrangements for reducing oxides and obtaining iron, potassium, sodium, phosphorus, chlorine, or their compounds. Dated 23rd August, 1871.
2219. W. R. Lake, of London. An improved galvanic battery, and liquid to be used in such batteries. Dated 23rd August, 1871.
2232. T. G. Smith, of London. Improvements in the production of chlorine and hypochlorites. Dated 25th August, 1871.
2233. F. Parry, of Piccadilly. Improvements in apparatus for drying precipitated sewage and other like substances. Dated 25th August, 1871.
2237. J. T. Dunn, of Brixton. Improvements in the manufacture of pearl hardening, white of baryta and precipitated sulphate of lime, as well as of substitutes for these. Dated 25th August, 1871.
2240. W. R. Lake, of London. An improved bed or couch for facilitating the use of clysters or injections. Dated 25th August, 1871.
2260. E. P. H. Vaughan, of London. Improvements in the manufacture of stannate of soda and stannate of potash. Dated 29th August, 1871.
2282. H. A. Johnson, of Ladbury. An improved compound solution suitable as a vehicle to mix with pigments and colouring matters in the preparation of paint. Dated 30th August, 1871.
2295. J. T. Cocking, of Penzance, Cornwall. An improved plastic material suitable for surgical splints and other purposes. Dated 31st August, 1871.
2308. J. K. Leather, of St. Helen's, Lancaster. Improvements in the manufacture of bleaching powder. Dated 1st September, 1871.
2311. A. Ford, of Notting-hill. Improvements in the mode of treating linseed and other seed and vegetable oils, so as the better to fit them for employment in the arts and manufactures. Dated 2nd September, 1871.

229. J. Hargreaves, of Appletton-within-Widnes, and T. Robinson, of Widnes, Lancaster. Improvements in the manufacture of chlorine. Dated 4th September, 1871.
2574. J. Mactear, of Glasgow. Improvements in utilizing bye products of the soda and potash manufactures, and in apparatus therefor. Dated 8th September, 1871.
2578. W. Brookes, of London. Improvements in filtering presses for expressing the liquid parts and retaining the solid parts of semi-liquid substances. Dated 8th September, 1871.
2584. T. Rowan, of Glasgow. Improvements in utilizing bye products obtained in the manufacture of alkali, and in treating enprous and other metallic solutions and compounds. Dated 9th September, 1871.

Letters Patent have been issued for the following :—

- [205. J. Church, of Glasgow. Improvements in distilling, and in apparatus therefor. Dated 4th February, 1871.
324. T. Rowan, of Glasgow. Improvements in pigments. Dated 8th February, 1871.
491. T. J. Smith, of London. Improvements in the nitrification of ammoniac. Dated 24th February, 1871.
526. R. Fennelly, of London-bridge. Improvements in preserving animal substances for use as food. Dated 27th February, 1871.
568. J. Briggs and J. Bailey, both of Whitecross-street. Improvements in apparatus employed in the production and manipulation of aerated waters. Dated 3rd March, 1871.
621. T. Gibb and C. Gelstharpe, both of Jarrow-on-Tyne, Durham. Improvements in treating metallic solutions and precipitates. Dated 9th March, 1871.
655. W. Bailey, of Wolverhampton. Improvements in trusses for hernia. Dated 11th March, 1871.
690. A. Robertson, of Glasgow. Improvements in applying heat or cold to the human body, and in the apparatus or means employed therefor, such apparatus being applicable as pessaries or dilators. Dated 15th March, 1871.
845. A. A. Croll, of Coleman-street. Improvements in the treatment of ammoniacal liquor to obtain salts of ammonia. Dated 29th March, 1871.
856. W. E. Newton, of London. An improved process of, and apparatus for, manufacturing, clarifying, and decolorizing syrups and sugars. Dated 30th March, 1871.
873. C. D. Abel, of London. Improvements in the manufacture and purification of glycerine. Dated 1st April, 1871.
995. J. Townsend, of Glasgow. Improvements in treating phosphates containing alumina, and in obtaining products therefrom. Dated 14th April, 1871.
1179. T. Schwartz, of New York. Improvements in the method of treating wood for the production of acetic acid, and the utilization of the bi-products. Dated 2nd May, 1871.
1396. A. M. Clark, of London. Improvements in strainers, or envelopes, used in extracting liquids from various substances. Dated 24th May, 1871.
1406. R. Dawlings, of Great Winchester-street. An improved process of decolorizing syrups, juices, liquors, oils, and other liquids; also gases by the use of carbonized iron ore or carbonate of iron. Dated 25th May, 1871.
1519. W. R. Lake, of London. Improvements in pads for rupture trusses. Dated 8th June, 1871.
1619. J. Duncan, of Mining-lane, and J. Stenhouse, of Pentonville. Improvements in the manufacture of sugar, and in the treatment of saccharine solutions. Dated 20th June, 1871.
1675. G. Gwynne, of Marylebone-road. Improvements in treating fatty, oily, waxy, and hydrocarbon bodies. Dated 26th June, 1871.
1682. H. Deacon, of Appletton House, near Warrington, Lancaster. Improvements in certain apparatus for the manufacture of chlorine and of sulphuric acid. Dated 27th June, 1871.
1908. H. Deacon, of Warrington, Lancaster. Improvements in the manufacture of sulphate of soda and of sulphate of potash, and of chlorine and of bleaching powder. Dated 21st July, 1871.

Specifications published during the month. Postage 1d. each extra :—  
1870.

2047. J. Hargreaves and another. Making sulphates of soda and potassa. 1s. 10d.
3167. F. Hillé. Manufacture of disinfecting compounds, etc. 1s.
3169. H. Y. D. Scott. Treatment of sewage, etc. 8d.
3308. D. G. Fitz-Gerald. Voltaic batteries. 6d.
3324. R. Tooth. Condensing saccharine juices, etc. 1s. 4d.
3343. R. M. Lowne. Spirometers. 10d.
3349. W. Spence. Invalid bedsteads. 8d.
3351. C. A. Culvert. Drawing off and measuring liquids. 8d.
3367. J. Gamgee and another. Medicating cotton, etc. 4d.
3394. G. Glover. Invalid bedsteads. 4d.

1871.

20. H. W. Brand. Compound meat extract and preserved milk. 4d.
22. R. Irvine. Phosphates. 4d.
23. H. Larkin and another. Manufacture of sodium and potassium. 8d.
46. W. H. Furtongo. Furnaces for the manufacture of alkalies, etc. 4s. 6d.
71. J. H. Nutt and another. Envelopes for oil presses. 4d.
79. H. Kenyon and another. Producing sulphurous and other acids, etc. 4d.
105. E. Sonstadt. Acetates and carbonates of sodium and potassium. 4d.
167. B. J. King. Sealing artificial teeth. 8d.
176. E. Madge. Circulation of liquids in chemical manufactures. 8d.
324. T. Rowan. Pigments. 4d.
334. P. Holland. Preparing coloring matters. 4d.
348. J. Rattray. Cork or stoppers. 4d.
351. C. Baly. Treating sewage, etc. 1s. 2d.
359. H. J. F. H. Foveaux. Valve for administering injections. 8d.
452. G. Haseltine. Carburetted atmospheric air. 1s. 2d.
472. G. Haseltine. Carburetted atmospheric air. 10d.
861. W. C. Westerton. Disinfecting fluid. 4d.
1295. W. R. Lake. Nitro-glycerine. 8d.
1519. W. R. Lake. Pads for trusses. 6d.

## Exchange Column.

REVISED TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the publisher of the CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to "The Publisher of the CHEMIST AND DRUGGIST, Colonial Buildings, Cannon-street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

### FOR DISPOSAL.

A Two-gallon Coffey's Still. Half cost price. T. Cuthbertson, Chemist, Lostwithiel.

Overstock of Silk and Cotton Elastic Stockings, nearly new. Offers wanted. 22/431.

Chemical Apparatus and Books, second-hand, cheap. B. D., 21, Kenton-street, London, W.C.

Five Richmond's Condition Powders, 2/6; ten ditto, 1/6 each. Offers wanted. J. J. W., Egremont, Cumberland.

Attfield's "Chemistry," Gill's "Chemistry," Huxley's "Physiology," new, to be sold cheap. S. T. Sugden, J. Williams, Esq., Surgeon, etc., Brentford.

Cabinet of "Materia Medica," by Evans, Lescher, and Co., in perfect condition, 14/. Hooper's "Medical Dictionary;" and Erichsen's "Surgery." Offers requested. 40/431.

Counter Scales, with mahogany stand, good condition; Photographic Apparatus, large Mortar, Tincture Press, Telescope, Sundries. Carrington, Wincanton, Somersetshire.

Offers wanted for hf.-bd. calf Rhind's "Vegetable Kingdom," with coloured plates, etc., quite new, and scarcely used, cost 26/. George C. Jones, High-street, East Grinstead, Sussex.

Attfield's "Chemistry," Buckmaster's ditto, Royle's "Materia Medica," Cooke's "Botany," Smith's "Guide." All last editions, good condition; offers. Sheppard, jun., Newark.

A Bargain.—"Pharmaceutical Journals" for sale, from 1848 to 1870. Monthly Parts, 3d. each; yearly, 2/ each; postage, etc., not included. Address, George Sant, Atherstone.

Silver Inhaler, Leech Aquarium, Electric Machine, Microscope, cheap. Powell's "Electuary," and Buckmaster's "Chemistry." Apply for particulars, "Alpha," Post Office, Clay Cross.

Recipe for excellent Sauce, set of French Gramme Weights, Blow-pipe, Bentley's "Botany," Smith's "Pharmaceutical Guide," Churchill's "Chemical Processes." "Alpha," Post-office, Metfield, Harlestown, Norfolk.

Mahogany Dispensing Counter, with marble slab in front of glass mirror, with case each side; length of counter, 7 feet; breadth, 28 inches; handsomely finished, and equal to new. Offers requested. Barton, Gipsy-hill, Norwood.

For Sale, a first class Bicycle, cost £10 in March last, and little worse than new. Price £5, or the owner will exchange it for a Chemical Cabinet or Photographic Apparatus of equal value. Thomas Brewis, A. P. S., Rothbury.

Owen's "Compendium." Receipts and Processes, Pharmacy, Chemistry, Confectionery, Perfumery, Cosmetics, Homoeopathy, Essences, Wines, latest Discoveries and Improvements. New impression, 26 stamps. Invaluable. Owen, Chemist, Leytonstone.

Ten 2/9 Parr's Pills, 15/; five 2/9 Lignum's Drops, 7 6; one 4/6 put Holloway's Ointment, 2 6; six 1/1½ Locock's Wafers, 4/; one 2/9 Moxon's Magnesia, 1/; four 2/9 Sweeting's Elixir, 6/; four 1/1½ Sweeting's Elixir, 2 3; three 1/1½ Caird's Corn Plasters, 2/; four 1 1 American Scotch Pills, 2/. The whole, not including carriage, £2. Henry Neale, Riddings, near Alfreton.

Dows and Co.'s Generator Charging Pipe and Agitating Rack, and Five-gallon Cylinder, complete, to manufacture Soda Water, cost £34 10s. Four Lace-pattern Tumbler-holders. Ice Safe, cost £22 2s. Two-gallon Swan-neck Show Bottle. Cash offers. 18/431.

Large Marble Mortar and Pestle, mortar, 20 in. in diameter, 11 in. deep, and 2½ in. thick; pestle, 7 ft. long, with socket. Also, large Sign, 17 ft. 9 in. by 7 ft.; also, Two Yard Pumps, complete, in good working order; also, Pad, Panniers, etc., suitable for pony or donkey. Apply, Messrs. Wilkinson and Co., 4, Batter's-hill, Sheffield.

Twenty Stopped Store Bottles, gilt labels, offers. Pair of Show Globes, 10/. Counter Scales, 2/6. Three dozen Violet Ink, 9/. Gas Holder and Retort for Dentist or Laboratory, 3/6. Cooper's "Surgical Dictionary," 5/. Fowne's "Manual," 4/. Bateman's "Skin Diseases," with plate, 2/. Turner's "Chemistry," 3/. Elliotson's "Physiology," 6/. Ure's "Dictionary of Chemistry," 6/. Muspratt's "Chemistry," 36/. Y. Z., Stamp Office, Bourn.

Twenty-six 1/ tins Liebig's Ext. Meat Lozenges; one 1/ Liebig's Food for Infants; five 1/6 Coleman's Ext. Meat Jelly; five 1/6 Davies's Balmoral Tooth Paste; two 8 l., two 4d. Saunder's Nutritive Food; four 2/6 Brockedon's Bicarbonate Potass.; three 1/1½ Coles's Nervine; one 1 1½, five 7½d. Garibaldi Ointment; four 1/9 Cupiss' Condition Balls; two 1/ Borwick's Baking Powder; one 1/ Hard's Food. The above for 35/ cash. Address, F. Blunden, Basingstoke.

Six lbs. Zinc Oxyd, 1/ per lb.; 1 lb. Pulv. Gambogiae, 3/; 4 lbs. Pulv. Gallæ, 1/ per lb.; 3 lbs. Pulv. Cretæ Aromat., 3/4 per lb.; 1 lb. Tinct. Lobeliæ, 2/3; 1 lb. Tinct. Digitalis, 2/; 8 lbs. Mist. Sennæ Co., 6d. per lb.; 4 lbs. Ol. Oregani, 2/3 per lb.; 14 lbs. Pulv. Cubebæ, 6d. per lb.; 2 dozen Adsheds 6d. Furniture Cream, 3/ per dozen; 4 dozen Green's Feeding Bottles, without fittings, 1/3 per dozen; ½ lb. Ext. Belladonnæ, 5/ per lb.; 8 lbs. Pulv. Zingib. Jam Sec., 8d. per lb. All or any of the above. J. Bradley, 42, Porter-street, Hull.

#### WANTED.

"British Pharmacopœia," 1867. State price. 16/431.

"The Illustrated Horse Doctor," by E. Mayhew. State price to George Sant, Atherstone.

Eight dozen Glass Drawer Knobs. Good Stove for shop. Banks, Chemist, Stockport.

Two dozen each 4-lb. Ointment and 8-oz. Pill Jars, as Maw's Illustration, No. 1. 20/431.

"British Pharmacopœia," 1867. State price and condition. A.B., Post-office, Codnor, Alfreton.

A large Wood or Stone Mortar, 2 to 3 feet diameter. T. Cuthbertson, Chemist, Lostwithiel.

Gray's "Anatomy," cheap; Selecta à Prescriptis. State price and condition. G. F., 89, Bloomsbury-street, Birmingham.

Two Show Glasses with lacquered tin covers; height to shoulder about 17 inches—diameter, 12. A., Market-place, Stroud.

A good work on the "Practice of Physic," also one on "Veterinary Practice." Address, Chemicus, 18, Melbourne-street, Nottingham.

Money offers for 4-gallon Copper Still (Maw's), nearly new, complete, with Tubes and Tub. Gas apparatus and india-rubber tubing attached; can be used with gas or coke. 8/431.

"Homœopathie Domestique Physicien," by Epps and Pulte. State condition and price. Transparent Stereoscopic Slides. Send price and particulars. Pattison, Chemist, Shrewsbury.

"British Pharmacopœia," Squire's "Companion," Beasley's "Pocket Formulary," Beasley's "Prescriptions," "Selecta à Prescriptis" (latest editions, and in good condition). Thomas Brewis, A.P.S., Rothbury.

## Varia.

### CHLORAL HYDRATE.

As an indication of the quantity of hydrate of chloral used in England since its introduction about a year and a half ago, Dr. Richardson states, on what he has every reason to consider reliable authority, that one commercial house alone has supplied the English drug market with ten tons of the substance; three other houses have, it is supposed, supplied as much; so that fifty tons weight have been, on this calculation, sent out—an amount which divided into grains, would yield over thirty-six millions of narcotic doses to England alone since August, 1869. The sale of the hydrate of chloral to medical men is considered as declining, while the general sale is, perhaps, increasing. Corresponding with this state of things, the medical profession is becoming conversant with cases of what may not improperly be called "chloral drinking," and in which serious and singular symptoms are presented.—*American Chemist*.

### THE NEW NOMENCLATURE.

A first prize of 1,875 francs and a second of 750 francs are offered at Göttingen for a new and exact determination of the atomic weights of the elements, together with the indication of the limits of error, accompanied by a review of the works of the various authors who have written on the subject. The prizes will be decided upon the 11th of March, 1873.—*Ibid*.

### NEW PHARAOH'S SERPENTS.

A mixture, which in burning gives the same appearance as the sulphocyanide of mercury, without being accompanied by similar noxious fumes, can be made by an intimate mixture of two parts acid chromate of potash, one part nitrate of potash, and three parts of white loaf sugar. After mixing, this should be moulded into pastilles of suitable shape and size, and kept away from light in a dry place. If they are to be kept for some time, they should be covered with a thin coat of gum-sandarach. A small amount of Peru balsam gives them a delightful odour when burning. The resulting ash in the form of a serpent is said to be an excellent polishing powder.—*Ibid*.

### QUANTITATIVE DETERMINATION OF IODINE.

William Reinige proposes a new method for the quantitative determination of iodine, founded upon the decomposition of the permanganate of potash by iodide of potassium. As neither chlorine nor bromine exhibits the same reaction, this method would appear to be the best for the quantitative analysis of iodine compounds. Take a solution of an iodine salt, add a little sulphuric acid to neutralize the excess of alkali, or render slightly alkaline by means of carbonate of potash or soda; then heat to gentle boiling in a beaker glass, and gradually add a solution, composed of 2.5 grammes permanganate of potash dissolved in 497.5 grammes distilled water, until all of the iodide of potassium is decomposed. The quantity of permanganate consumed will give the amount of iodine, for every gramme of it represents two milligrammes of iodine. The accuracy of the analysis is not destroyed by the presence of bromine or chlorine in the solutions.—*Scientific American*.



SINCE our last report the monetary world has seen quite a revolution. The Bank rate, after having remained stationary at the minimum rate of 2 per cent. for rather more than two months, by successive bounds has reached 5 per cent. Several causes have led up to this result, and foremost must be placed the heavy transfers of specie to Germany, in part payment of the enormous war indemnity

imposed upon France. Added to this, the low rate of discount seems to have emboldened speculators to a dangerous extent, and in order to check this tendency the timely action of the "Old Lady" in Threadneedle-street was most urgently needed, and, as the result proves, opportunely interposed. Now that the semi-panic consequent upon the energetic action of the directors has subsided, it is admitted that a more genuine confidence prevails in money quarters. The financial disturbance has had little or no effect upon commercial operations, which are as active as can be desired. It is a matter of regret, however, that France should desire to restrict these operations with herself by reverting to "protection." If, as is currently reported, M. Thiers has resolved next February to give the necessary twelve months' notice, which terminates the Commercial Treaty, we can only deplore such a narrow-minded course, as subversive to the true interests of France. At the same time there is good cause to hope that before February 1st the "national" sentiment will express itself against the revocation of the Treaty, and compel the President to abandon at all events, in this case, his "protectionist" proclivities.

The recent history of the Native Guano Company is certainly worthy to be classed among the romances of speculation. The A. B. C. process for the utilisation of sewage, which is the speciality of this company, has been more than once discussed in this journal, and it may be remembered, judging from the result of a careful practical experiment, we came to the conclusion that the manure supplied by the company, extracted from sewage, was almost valueless. The scientific investigations of Dr. Frankland, Dr. Odling, and others were most unfavourable to the process, whether it was regarded as one for producing manure or for purifying water. But the dark cloud which enveloped the prospects of the company has now turned itself quite inside-out, and proves to have a very thick silver lining. The shares, issued at £5, and which a year ago were worth next to nothing, now sell for more than £30 each, and have reached £40. The towns of Bolton, Leeds, and Southampton have made terms with the company to dispose of their sewage, to be treated by the A. B. C. process, and the Metropolitan Board of Works has sanctioned the erection of large model works at Crossness, to treat half a million gallons of London sewage daily, as an experiment. If successful, London has nearly fifty millions of gallons more to submit to the same process every day. The country may well look to the result of these experiments with interest. One can hardly conceive of any one thing that would so suddenly add to our national wealth as the discovery of a convenient process which would enable us to return to the earth the nourishment which we have withdrawn from it.

It is affirmed that up to the present time the demand for the manure has been fully equal to the supply, but we are not aware that any absolute proof has yet been offered in conjunction with this statement of its exact fertilising power. The ready sale of the manure is, of course, as nearly as can be sufficient evidence of its usefulness. But it is a rule-of-thumb estimate only, and neither that, nor the extraordinary advance of the shares, can be accepted as proof that the sewage problem has been finally solved.

The drug trade during the last month has been of a pretty even character, and we are unable to report any very startling changes. Old Cantharides continue dear, and in all probability will see still heavier prices, as the old crop, which was indifferent, is about exhausted. At the last fortnightly sales of Cochineal on October 4, 1,605 bags were submitted to auction; the quantity being in excess of several preceding sales had a depressing influence on prices, and 810 bags only changed hands at a drop of  $\frac{1}{2}$ d. per lb. for silver and 1d. per lb. for black. Cardamoms are getting scarce, and have an upward appearance, and it seems certain that at the comparatively low prices they fetched but recently they will not be obtainable for some months.

Copaiba Balsam is in good request, and the supply not being commensurate to the demand, a rise of 2d. per lb. has taken place. The very great scarcity of Canada is attributable to neglect in its collection; the price is firm at 2s. per lb., being exactly double the cost this time last year. There is still considerable obscurity about the position of Opium with immense stocks in the country, prices remain firm but that they can be maintained for any length of time in

the face of such unprecedented supplies we do not believe. It seems probable that large holders are simply bolstering up this drug. At the same time, there is a possibility of Chinese demands, caused by partial failure of the Indian crop.

In Essential Oils we have to note the further advance of Aniseed, which has moved up 6d. per lb. The present worth is 10s. 3d., and the scarceness is caused by a general failure of the seed crop. Cinnamon remains very scarce and dear. Advices from New York inform us that a spurious oil of wintergreen has been set afloat in that city. Shipments of it were made to Baltimore, and the trade there seems to have been generally gulled. One house received from Baltimore 50 lb. and paid for the same 4 dols. 25 cents. As the consumption of this essential oil is increasing here, it will be necessary to keep a sharp look-out, to prevent the spurious article from being imported. The quality of the new English Lavender is first-class, besides which there is an abundance, and easier terms prevail; new English Oil of Peppermint is also offering at lower prices, and the quality may be favourably reported on.

Spices are generally higher; Peppers have been in strong demand throughout the month; at public sales 1,815 bags, black, were chiefly sold, at an advance. Of 559 bags Singapore, 200 bags sold at 7 $\frac{1}{2}$ d.; sound Penang fetched 6 $\frac{1}{2}$ d. to 6 $\frac{3}{4}$ d.; white, 11 cases Tellicherry were put up and sold at 1s. 4d. to 1s. 4 $\frac{1}{2}$ d. Both Nutmegs and Mace are dearer, and Cinnamon supports its value. The exports of the latter from Ceylon up to September 2nd, fall short by 3,000 bales, as compared with the preceding year. The market is almost devoid of juniper berries, and Alicante anise-seeds are also very scarce.

The chemical market has been characterised by continued general firmness. Perhaps, the most notable feature we are enabled to report, is the unprecedented price of Iodine and its preparations. It is obtainable only in small parcels at 32s. per lb., and a further advance, rather than a decline, may be anticipated. Stocks are greatly reduced, a large quantity having been absorbed for technical purposes, and the manufacture must suffer from the scarcity of kelp, the collection of which was neglected in the wet season of the early part of the year.

Nitrate of Soda has advanced 2s. per cwt., and is firm at 16s. 9d. to 17s. Sulphate of Ammonia steady, and in fair request. Quinine has been the subject of good inquiry, and limited stocks only being held, has caused an appreciable rise. Both British and Pelletier's may be quoted at 7s. 6d. Bromide of Potassium fetches more money, and refined Borax has also considerably advanced, 95s. being the lowest present quotation. Bleaching Powder at full and improved prices is the medium of good business, and for forward deliveries still higher rates are demanded. Mercurials may be quoted 2d. per lb. higher all round, consequent upon the firm position of Quicksilver. This article is cautiously touched, speculators being fully alive to the omnipotent influence which "pulls the strings."

Saltpetre has been in good demand, and refiners have advanced their prices.

DRYSALTERIES.—Shellac is in rather an unsettled state, and prices decidedly tend upwards. From Madras we hear that but little of the new crop of Indigo has come forward, and reports as to the out-turn of the Kurpah crops are conflicting. In some districts want of rain is complained of, but in others a favourable result is expected. The demand there for dry leaf for France and Pondicherry has been good. Jute is without much change. In Calcutta heavy rains have interfered with the transmission of supplies, and the market has ruled firmer. Some transactions have taken place in the new jute for shipment, but consumers, as a rule, decline to do much at the high price demanded. On the spot but little activity prevails, but holders look for a better demand when consumers' stocks run low.

OILS.—Olive has been in steady demand, but prices remain the same. Linseed may be bought in export casks at 34s. 6d., and Rape has advanced. The clearances of Cocanutt from Ceylon up to the 2nd of last month are 462 tons, against 453 tons for same period 1870, and the closeness of the figures is rather remarkable.

TURPENTINE.—The value of Spirits has considerably advanced since our last report, prices having very much stiffened in America and Bordeaux. The present value of American in casks is 47s.

## Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mining-lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.]

## CHEMICALS.

	1871.		1870.	
<b>ACIDS—</b>	s. d.	s. d.	s. d.	s. d.
Acetic .....per lb.	0 4	to 0 0	0 4	to 0 0
Citric .....per lb.	3 0	.. 0 0	2 4½	.. 2 5
Hydrochlor. ....per cwt	4 0	.. 7 0	4 0	.. 7 0
Nitric .....per lb.	0 5	.. 0 5½	0 5	.. 0 5½
Oxalic .....per lb.	0 11½	.. 0 0	0 8	.. 0 0
Sulphuric .....per lb.	0 0½	.. 0 1	0 0½	.. 0 1
Tartaric crystal ..	1 5	.. 1 5½	1 3½	.. 0 0
powdered ..	1 4	.. 1 4½	1 4	.. 0 0
<b>ANTIMONY</b> ore.....per ton	240 0	.. 260 0	360 0	.. 400 0
crude ..per cwt	34 0	.. 38 0	48 0	.. 0 0
regulus ..	46 0	.. 47 0	70 0	.. 70 0
star ....	47 0	.. 48 0	0 0	.. 0 0
<b>ARSENIC</b> , lump.....	15 6	.. 16 0	15 6	.. 16 0
powder.....	6 9	.. 7 3	7 0	.. 7 6
<b>BRIMSTONE</b> , rough ..per ton	160 0	.. 0 0	160 0	.. 0 0
roll ....per cwt	10 0	.. 10 3	11 0	.. 0 0
flour.....	12 0	.. 13 0	12 0	.. 13 0
<b>IODINE</b> , dry .....per oz.	2 0	.. 0 0	0 9	.. 0 9½
<b>IVORY BLACK</b> , dry...per cwt.	0 0	.. 0 0	0 0	.. 0 0
<b>MAGNESIA</b> , calcined ..per lb.	1 1	.. 0 0	1 2	.. 0 0
<b>MERCURY</b> .....per bottle	220 0	.. 0 0	168 0	.. 0 0
<b>MINIUM</b> , red .....per cwt.	21 0	.. 21 6	21 0	.. 0 0
orange ..	32 0	.. 33 0	31 6	.. 32 6
<b>PRECIPITATE</b> , red ....per lb.	3 7	.. 0 0	2 11	.. 0 0
white ..	3 6	.. 0 0	2 10	.. 0 0
<b>PRUSSIAN BLUE</b> ..	0 0	.. 0 0	0 0	.. 0 0
<b>SALTS—</b>				
Alum .....per ton	140 0	.. 145 0	145 0	.. 150 0
powder ..	145 0	.. 150 0	160 0	.. 165 0
<b>Ammonia:</b>				
Carbonate .....per lb.	0 7	.. 0 7½	0 5½	.. 0 6
Hydrochlorate, crude,				
white.....per ton	520 0	.. 560 0	480 0	.. 560 0
British (see Sal Ammoniac)				
Sulphate .....per ton	440 0	.. 460 0	320 0	.. 325 0
<b>Argol</b> , Cape .....per cwt	60 0	.. 90 0	55 0	.. 73 0
France ....	0 0	.. 0 0	40 0	.. 50 0
Oporto, red ..	22 0	.. 24 0	22 0	.. 24 0
Sicily ..	0 0	.. 0 0	0 0	.. 0 0
Naples, white ..	0 0	.. 0 0	0 0	.. 0 0
Florence, white ..	0 0	.. 0 0	0 0	.. 0 0
red ..	0 0	.. 0 0	0 0	.. 0 0
<b>Ashes (see Potash and Soda)</b>				
Bleaching powder ..per cwt.	14 9	.. 0 0	9 3	.. 0 0
<b>Borax</b> , crude ....	25 0	.. 40 0	25 0	.. 35 0
(Tincal) ..	47 0	.. 85 0	45 0	.. 60 0
British refnd. ..	98 0	.. 0 0	65 0	.. 70 0
<b>Calomel</b> .....per lb.	3 5	.. 0 0	2 10	.. 0 0
<b>Copper:</b>				
Sulphate .....per cwt.	25 0	.. 26 0	23 0	.. 24 0
Copperas, green ..per ton	55 0	.. 60 0	50 0	.. 60 0
Corrosive Sublimate ..p. lb.	2 9	.. 0 0	2 3	.. 0 0
<b>Cr. Tartar</b> , French, p. cwt.	92 6	.. 0 0	88 0	.. 90 0
Venetian grey ..	95 0	.. 0 0	90 0	.. 96 0
brown ..	87 6	.. 90 0	0 0	.. 0 0
<b>Epsom Salts</b> ....per cwt.	6 0	.. 7 0	6 0	.. 7 0
<b>Glauber Salts</b> ....	4 6	.. 6 0	4 6	.. 6 0
<b>Lime:</b>				
Acetate, white, per cwt.	12 6	.. 23 0	12 6	.. 23 0
<b>Magnesia: Carbonate</b> ..	42 6	.. 0 0	42 6	.. 0 0
<b>Potash:</b>				
Bichromate ....per lb.	0 10	.. 0 0	0 5	.. 0 5½
<b>Carbonate:</b>				
Potashes, Canada, 1st				
sort .....per cwt.	36 6	.. 36 9	33 6	.. 34 0
Pearlshes, Canada, 1st				
sort .....per cwt.	46 0	.. 0 0	44 6	.. 45 0
Chlorate .....per lb.	1 4	.. 0 0	1 0	.. 0 0
Prussiate .....per lb.	1 7½	.. 1 8	1 0	.. 0 0
red ..	2 6	.. 2 10	1 9½	.. 1 10
<b>Tartrate (see Argol and Cream of Tartar)</b>				
<b>Potassium:</b>				
Chloride .....per cwt.	10 6	.. 11 0	14 0	.. 0 0
Iodide .....per lb.	28 0	.. 0 0	12 0	.. 0 0
<b>Quinine:</b>				
Sulphate, British, in				
bottles .....per oz.	7 6	.. 0 0	6 3	.. 0 0
Sulphate, French ..	7 6	.. 0 0	5 11	.. 6 0
Sal Acetate .....per lb.	1 2	.. 0 0	0 10	.. 0 0
Sal Ammoniac, Brit. cwt.	41 0	.. 42 0	41 0	.. 42 0
<b>Saltpetre:</b>				
Bengal, 6 per cent or				
under .....per cwt.	31 3	.. 31 9	26 6	.. 27 0
Bengal, over 6 per cent.				
per cwt.	30 0	.. 31 0	25 0	.. 26 0
Madras.....	0 0	.. 0 0	0 0	.. 0 0
Bomb & Kurrachee p. ct.	0 0	.. 0 0	0 0	.. 0 0
European.....	0 0	.. 0 0	0 0	.. 0 0
British, refined ..	31 9	.. 35 0	31 0	.. 0 0
<b>Soda: Bicarbonate</b> , p. cwt.	14 0	.. 0 0	10 6	.. 0 0
<b>Carbonate:</b>				
Soda Ash..... per deg.	0 2½	.. 0 2½	0 1½	.. 0 2
Soda Crystals per ton	102 6	.. 105 0	67 6	.. 0 0
<b>Hyposulphate</b> ..per cwt.	14 0	.. 16 0	18 0	.. 0 0

	1871.		1870.	
<b>Soda:</b>	s. d.	s. d.	s. d.	s. d.
Nitrate .....per cwt.	16 9	to 17 0	15 3	to 0 0
<b>SUGAR OF LEAD</b> , White, cwt.	39 0	.. 40 0	39 0	.. 40 0
Brown ..	26 0	.. 28 0	26 0	.. 28 0
<b>SULPHUR (see Brimstone)</b>				
VERDIORIS .....per b.	1 0	.. 1 2	1 0	.. 1 2
<b>VERMILION</b> , English...per lb.	3 4	.. 6 0	2 7	.. 2 9
China.....	3 6	.. 0 0	3 0	.. 3 2

## DRUGS.

<b>ALOES</b> , Hepatic....per cwt.	70 0	.. 220 0	60 0	.. 160 0
Socotrine ..	120 0	.. 280 0	100 0	.. 220 0
Cape, good ..	27 0	.. 36 0	23 0	.. 28 0
Inferior ..	20 0	.. 26 0	16 0	.. 22 0
Barbadoes ..	70 0	.. 210 0	70 0	.. 200 0
<b>AMBERGRIS</b> , grey.....oz.	25 0	.. 30 0	25 0	.. 30 0
<b>BALSAMS—</b>				
Canada .....per lb.	2 0	.. 0 0	1 0	.. 0 0
Capivi ..	1 11	.. 2 0	1 6	.. 1 7
Peru ..	9 0	.. 0 0	9 3	.. 0 0
Tolu ..	1 11	.. 2 0	2 2	.. 2 4
<b>BARKS—</b>				
Canella alba ....per cwt.	15 0	.. 25 0	18 0	.. 32 0
Cascarilla.....	20 0	.. 37 0	18 0	.. 32 0
Peru, crown & grey per lb.	1 3	.. 2 10	0 10	.. 2 5
Calisaya, flat ..	3 2	.. 3 4	3 3	.. 3 9
quill ..	3 2	.. 3 4	3 2	.. 3 8
Cartbagenia ..	0 10	.. 1 8	1 0	.. 1 9
Pitayo ....	0 10	.. 1 6	0 10	.. 1 6
Red ..	2 0	.. 7 3	1 6	.. 5 6
Bucho Leaves ..	0 4	.. 1 0	0 3	.. 0 6
<b>CAMPHOR</b> , China...per cwt.	67 6	.. 70 0	72 6	.. 75 0
Japan ..	75 0	.. 9 0	75 0	.. 0 0
Refin Eng. per lb.	1 2½	.. 1 3	1 2½	.. 0 0
<b>CANTHARIDES</b> ..	5 0	.. 0 0	3 11	.. 0 0
<b>CHAMOMILE FLOWERS</b> p. cwt	40 0	.. 60 0	40 0	.. 72 6
<b>CASTOREUM</b> .....per lb.	3 0	.. 30 0	3 0	.. 30 0
<b>DRAGON'S BLOOD</b> , lp. p. cwt.	100 0	.. 210 0	90 0	.. 200 0
<b>FRUITS AND SEEDS (see also Seeds and Spices)</b>				
Anise, China Star pr cwt.	127 6	.. 130 0	110 0	.. 117 6
German, &c. ..	41 0	.. 47 0	25 0	.. 40 0
<b>Beans</b> , Tonquin ..per lb.	0 9	.. 1 6	0 9	.. 1 4
<b>Cardamoms</b> , Malabar				
good ..	9 6	.. 10 0	9 6	.. 10 6
inferior ..	7 6	.. 9 9	7 6	.. 9 0
Madras ..	3 6	.. 9 6	5 6	.. 9 0
Ceylon ..	3 0	.. 3 4	2 8	.. 3 3
<b>Cassia Fistula</b> .. per cwt.	12 0	.. 30 0	14 0	.. 32 0
<b>Castor Seeds</b> ..	10 0	.. 12 0	10 0	.. 12 0
<b>Cocculus Indicus</b> ..	17 0	.. 18 0	12 6	.. 13 0
<b>Colocyntb</b> , apple.. per lb.	0 3	.. 0 6	0 4	.. 0 8
<b>Croton Seeds</b> .. per cwt.	70 0	.. 75 0	85 0	.. 90 0
<b>Cubebs</b> ..	23 0	.. 26 0	27 6	.. 32 6
<b>Cummin</b> .....	48 0	.. 55 0	50 0	.. 60 0
<b>Dividivi</b> ..	12 0	.. 14 6	12 0	.. 14 0
<b>Fenugreek</b> .....	13 0	.. 22 0	12 0	.. 15 0
<b>Guinea Grains</b> ..	23 0	.. 23 6	24 6	.. 28 0
<b>Juniper Berries</b> ..	15 0	.. 15 6	10 6	.. 0 0
<b>Myrobalans</b> ....	12 6	.. 17 0	7 6	.. 15 6
<b>Nux Vomica</b> .....	10 6	.. 14 0	10 6	.. 13 0
<b>Tamarinds</b> , East India ..	2 0	.. 12 0	10 0	.. 16 0
West India, new ..	10 0	.. 27 6	10 0	.. 17 0
<b>Vanilla</b> , large ....per lb.	30 0	.. 41 0	32 0	.. 37 0
inferior ..	12 0	.. 28 0	25 0	.. 30 0
<b>Wormseed</b> ..per cwt.	0 6	.. 0 0	35 0	.. 0 0
<b>GINGER</b> , Preserved, in bond				
(duty 1d. per lb.) per lb.	0 6	.. 0 10	0 6	.. 0 8
<b>GUMS (see separate list)</b>				
<b>HONEY</b> , Chili ....per cwt.	43 0	.. 57 0	32 0	.. 46 0
Cuba ....	27 0	.. 42 0	22 0	.. 36 0
Jamaica ..	36 0	.. 53 0	31 0	.. 52 0
<b>IPECACUANHA</b> ..per lb.	4 9	.. 5 3	4 7	.. 4 9
<b>ISINOLASS</b> , Brazil ..	2 6	.. 4 6	3 1	.. 4 8
Tongue sort ..	3 4	.. 5 4	4 0	.. 5 0
East India ..	1 6	.. 4 0	1 8	.. 4 1
West India ..	4 0	.. 4 4	4 4	.. 4 9
Russ. long staple	6 0	.. 9 6	5 6	.. 8 0
leaf ..	3 6	.. 6 6	3 0	.. 5 6
Simovia ..	2 0	.. 3 6	1 6	.. 2 6
<b>JALAP</b> , good ..	1 6	.. 3 0	1 8	.. 3 0
infer. & stoms ..	0 6	.. 1 5	0 6	.. 1 6
<b>LEMON JUICE</b> ...per degree	0 1	.. 0 1½	0 1	.. 0 1½
<b>LIQUORICE</b> , Spanish per cwt.	35 0	.. 37 0	0 0	.. 0 0
Italian ..	40 0	.. 60 0	40 0	.. 60 0
<b>MANNA</b> , flaky ....per lb.	3 6	.. 4 0	2 6	.. 3 4
small.....	2 0	.. 2 2	1 9	.. 0 0
<b>MUSK</b> .....per oz.	21 0	.. 37 6	16 6	.. 32 0
<b>OILS (see also separate List)</b>				
Almond, expressed per lb.	1 4	.. 0 0	1 0	.. 0 0
Castor, 1st pale ....	0 5	.. 0 5½	0 4½	.. 0 5
second ..	0 4½	.. 0 4½	0 4½	.. 0 4½
infer. & dark ..	0 4½	.. 0 4½	0 4	.. 0 4½
Bombay (in casks)	0 4	.. 0 4½	0 4	.. 0 4½
<b>Cod Liver</b> .....per gall.	5 0	.. 6 0	5 0	.. 6 0
<b>Croton</b> .....per oz.	0 3½	.. 0 4½	0 3½	.. 0 4½
<b>Essential Oils:</b>				
Almond .....per lb.	42 0	.. 0 0	42 0	.. 0 0
Anise-seed .....per lb.	10 3	.. 10 6	8 6	.. 0 0
Bay .....per cwt.	65 0	.. 70 0	65 0	.. 70 0
Bergamot .....per lb.	8 0	.. 15 0	8 0	.. 15 0
Cajuput, (in bond) per oz.	0 1½	.. 0 3	0 2½	.. 0 3
Caraway .....per lb.	5 6	.. 6 3	5 6	.. 6 3
Cassia ..	4 3	.. 0 0	4 6	.. 0 0
Chamunon .....per oz.	0 10	.. 3 0	1 0	.. 4 6
Cinnamon-leaf ..	0 2	.. 0 4½	0 2	.. 0 6

	1871.				1870.			
	s.	d.	s.	d.	s.	d.	s.	d.
Essential Oils, continued:—								
Citronello ..... per oz.	0	1½	to	0	0	2	to	0 2½
fine.....	0	0	..	0	0	2½	..	0
Clove..... per lb.	2	4	..	0	2	6	..	0
Juniper.....	1	9	..	2	1	9	..	2
Lavender.....	3	6	..	6	3	0	..	4 3
Lemon.....	5	0	..	9	5	0	..	9 6
Lemongrass..... per oz.	0	2½	..	0 2½	0	2½	..	0 3
Neroli.....	0	5	..	0 6	0	5	..	0 6
Nutmeg.....	0	4	..	0 6½	0	4	..	0 7½
Orange..... per lb.	5	0	..	7	5	0	..	7
Otto of Roses..... per oz.	12	0	..	21	13	0	..	20
Patchouli.....	3	0	..	0	6	0	..	0
Peppermint:								
American..... per lb.	12	6	..	14	15	0	..	15 6
English.....	33	0	..	34	36	0	..	38 0
Rosemary.....	1	9	..	2	1	9	..	2
Sassafras.....	3	0	..	3 6	3	0	..	0
Spearmint.....	4	0	..	16	4	0	..	16
Thyme.....	1	10	..	2	1	10	..	2
Mace, expressed .. per oz.	0	1½	..	0 3	0	1	..	0 2½
Opium, Turkey..... per lb.	19	0	..	30	26	0	..	30
inferior.....	12	0	..	18	18	0	..	25
Quassia(bitter wood) per ton	60	0	..	70	60	0	..	70
Rhubarb, China, good and								
fine..... per lb.	2	0	..	6 4	4	3	..	8 0
Good, mid. to ord. ..	0	4	..	1 10	0	7	..	4 8
Dutch trimmed ..	0	0	..	0	9	6	..	10
Russian.....	0	0	..	0	0	0	..	0
ROOTS—Calumba..... per cwt.	25	0	..	42	22	6	..	40
China.....	26	0	..	28	25	0	..	35
Galangal.....	17	0	..	20	16	0	..	18
Gentian.....	27	0	..	30	25	0	..	26
Hellebore.....	30	0	..	35	22	0	..	30
Oris.....	65	0	..	80	50	0	..	52
Pellitory.....	58	0	..	60	58	0	..	60
Pink..... per lb.	0	9	..	1 3	0	7	..	0 10
Rhatany.....	0	4	..	0 11	0	8	..	0 10
Seneka.....	5	6	..	5 9	2	10	..	3
Snake.....	1	4	..	1 6	1	0	..	0
Saffron, Spanish ..	35	0	..	44	52	0	..	0
Salki..... per cwt.	170	0	..	210	110	0	..	0
Sarsaparilla, Lima per lb.	0	6	..	0 7½	0	6	..	0 7½
Pare.....	1	0	..	1 3	1	0	..	1 3
Honduras.....	1	2	..	1 7½	1	1	..	1 6½
Jamaica.....	1	7	..	3	1	9	..	3 2
Sassafras..... per cwt.	0	0	..	0	0	0	..	0
Scammony, Virgin .. per lb.	26	0	..	32	28	0	..	32
second & ordinary ..	10	0	..	25	10	0	..	23
Senna, Bombay ..	0	3½	..	0 6	0	3½	..	0 6
Tinnevely.....	0	3½	..	1 6	0	3½	..	1 4
Alexandria.....	0	3½	..	1 7	0	4½	..	1 7
Spicmacchi, refined..	1	6	..	1 7	1	6	..	1 7
American.....	1	2	..	1 3	1	4	..	0 0
Squill.....	0	1½	..	0 2	0	1	..	0 1½
GUMS.								
Ammoniac drop .. per cwt.	80	0	..	150	60	0	..	90
lump ..	55	0	..	75	45	0	..	65
Animi, fine washed ..	280	0	..	335	290	0	..	340
bold scraped ..	210	0	..	270	220	0	..	2 0
sorts ..	140	0	..	230	100	0	..	2 0
dark ..	85	0	..	130	75	0	..	100
Arabic, E. I., fine								
pale picked ..	66	0	..	74	65	0	..	70
sorts, gd. to fin ..	52	0	..	65	48	0	..	60
garblings ..	22	0	..	40	30	0	..	50
Turkey, pick. gd. to fin.	160	0	..	200	160	0	..	200
second & inf. ..	85	0	..	155	85	0	..	155
in sorts ..	65	0	..	80	70	0	..	90
Gedda.....	38	0	..	44	38	0	..	44
Barbary, white ..	0	0	..	0	65	0	..	70
brown ..	44	0	..	46	60	0	..	0
Australian ..	21	0	..	42 6	20	0	..	42
Assafetida, com. to gd ..	30	0	..	100	30	0	..	85
Benjamin, 1st qual. ..	160	0	..	400	280	0	..	440
2nd ..	150	0	..	210	140	0	..	200
3rd ..	40	0	..	85	50	0	..	90
Copal, Angola red ..	127	6	..	132 6	90	0	..	100
Benguela ..	95	0	..	110	90	0	..	100
Sierra Leone..... per lb.	0	3	..	0 10½	0	4	..	1 2½
Manilla..... per cwt.	17	0	..	38	30	0	..	50
Dammar, pale ..	62	6	..	67	50	0	..	55
Euphorbium ..	10	0	..	0	13	0	..	14
Galbanum ..	200	0	..	260	160	0	..	260
Gamboge, pkd pipe ..	220	0	..	285	240	0	..	265
Guaiacum..... per lb.	0	0	..	2 10	0	9	..	2 4
Kino..... per cwt.	60	0	..	90	60	0	..	140
Kowrie, rough ..	16	0	..	35	30	0	..	40
scrapped ..	36	0	..	75	42	6	..	100
Mastic, picked..... per lb.	6	0	..	6	7	6	..	8
Myrrh, gd. & fine per cwt.	130	0	..	180	150	0	..	200
sorts ..	00	0	..	120	80	0	..	140
Olibanum, p. sorts	70	0	..	75	68	0	..	74
amber & ylw. ....	63	0	..	69	58	0	..	66
garblings ..	10	0	..	45	18	0	..	40
Senegal..... per cwt.	67	0	..	85	77	0	..	90
Sandarac ..	55	0	..	110	45	0	..	97
Thur.....	17	0	..	0	12	0	..	14
Tragacanth, leaf..	200	0	..	450	220	0	..	350
in sorts ..	110	0	..	180	115	0	..	210
OILS.								
Seal, pale..... per tun	£33	6	..	0 0	£36	0	..	0 0
yellow to tinged ..	33	0	..	32 10	33	0	..	35 10
brown.....	29	0	..	30 3	30	0	..	32
Sperm, body ..	80	0	..	81	80	0	..	0
headmatter ..	81	0	..	0 0	0	0	..	0 0

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Oils, continued:—				£	s.	£	s.	
COD.....	per tun	33	10	to	0	0	38	0
WHALE, South Sea, pale ..		32	0		0	0	36	0
yellow ..		31	0		0	0	35	10
brown ..		29	0		30	0	34	0
East India, Fish ..		28	0		28	10	32	0
OLIVE, Galipoli ..		51	0		0	0	48	0
Trieste ..		50	0		0	0	47	0
Levant ..		48	0		0	0	46	0
Mogador ..		48	0		0	0	45	10
Spanish ..		50	0		0	0	47	0
Sicily ..		49	10		0	0	47	0
COCOANUT, Cochinn. per ton		51	0		0	0	44	10
Ceylon ..		38	0		38	5	37	10
Sydney ..		33	0		88	10	32	0
GROUND NUT AND GINGERLY:								
Bombay ..		0	0		0	0	0	0
Madras.....		46	0		0	0	43	0
PALM, fine.....		37	0		0	0	40	0
LINSEED .....		33	6		0	0	30	0
RAPESEED, English, pale ..		46	10		0	0	43	10
brown.....		44	10		45	0	41	10
Foreign pale.....		50	0		51	0	46	0
brown.....		44	10		0	0	42	0
COTTONSEED .....		33	10		34	10	29	0
LARD.....		50	0		52	0	70	0
TALLOW .....		36	0		0	0	35	0
TURPENTINE, American, cks.		47	0		0	0	28	0
PETROLEUM, Crude .....		0	0		0	11½	0	0
		s. d.			s. d.		s. d.	
refined, per gall.		1	6½		0	0	1	5½
Spirit ..		0	11		0	11½	1	0
SEEDS.								
CANARY.....	per qr.	52	0		58	0	48	0
CARAWAY, English per cwt.		0	0		0	0	40	0
German, &c.....		0	0		0	0	25	0
CORIANDER .....		0	0		0	0	0	0
HEMP.....	per qr.	40	0		44	0	44	0
LINSEED, English per qr.		0	0		0	0	0	0
Black Sea & Azof ..		60	0		61	0	57	6
Calcutta ..		63	6		0	0	60	9
Bombay ..		64	6		0	0	61	9
St. Petersburg ..		58	0		0	0	54	0
Mustard, brown.....per bshl.		0	0		0	0	0	0
white.....		9	0		9	6	9	0
POPPY, East India per qr.		60	0		61	0	55	0
SPICES.								
CASSIA LIGNEA ....	per cwt.	108	0		121	0	98	0
Vora .....		42	0		80	0	47	0
Buds.....		125	0		0	0	155	0
CINNAMON, Ceylon,								
1st quality.....	per lb.	2	8		3	8	1	8
2nd do.....		2	0		3	6	1	3
3rd do.....		1	10		3	0	1	1
Tellicherry ..		2	7		3	0	2	8
CLOVES, Penang.....		1	4½		1	6½	0	10
Amboyna.....		0	4½		0	10½	0	5
Zanzibar ..		0	2½		0	3½	0	2½
GINGER, Jam, fine per cwt.		90	0		180	0	80	0
Ord. to good ..		42	0		87	0	32	0
African.....		33	0		34	0	26	0
Bengal.....		33	0		34	0	26	0
Malabar ..		33	6		35	0	23	6
Cochin.....		45	0		130	0	30	0
PEPPER, Blk. Malabar, per lb.		0	7		0	7½	0	5½
White, Tellicherry ..		1	0		1	6	0	9
Cayenne ..		0	9		1	6½	0	8
MACE, 1st quality.....	per lb.	4	6		4	10	3	1
2nd and inferior..		4	0		4	5	2	5
NUTMEGS, 78 to 60 lb.		3	4		4	3	2	9
90 to 80 ..		3	1		3	3	2	3
132 to 95 ..		2	8		3	0½	1	8
VARIOUS PRODUCTS.								
COCHINEAL—								
Honduras, black ..	per lb.	2	6		3	4	2	6
"    silver ..		2	5		2	9	2	5
"    pasty ..		2	4		0	0	1	9
Mexican, black ..		2	5		2	9	2	6
"    silver ..		2	4		2	5	2	3
Teneriffe, black.....		2	6		3	10	2	6
"    silver.....		2	4		0	0	2	8
PUMICE STONE.....	per ton	120	0		150	0	120	0
SOAP, Castile .....	per cwt.	35	0		0	0	35	0
SPONGE, Turk. fin pkd pr lb.		12	0		16	0	12	0
Fair to good ..		4	0		11	0	4	0
Ordinary .....		1	0		8	6	1	0
Bahama .....		0	6		2	6	0	6
TERRA JAPONICA—								
Gambier ..	per cwt.	17	0		0	0	16	0
Free cubes ..		18	0		20	6	17	0
Cutch .....		21	0		29	0	19	0
WOOD, DYE, Bar ..	per ton	43	15		44	5	43	15
Brazil .....		0	0		0	0	0	0
Brazilletto .....		0	0		0	0	0	0
Cam .....		20	0		22	0	17	0
Fustic, Cuba.....		7	10		8	10	7	10
Jamaica .....		5	10		6	15	4	0
Savanna.....		0	0		0	0	0	0
LOGWOOD, Campeachy ..		9	10		10	0	9	10
Honduras .....		5	10		6	10	5	10
St. Domingo ..		4	7		6	0	5	10
Jamaica .....		4	12		4	17	3	12
LIMA, first pilo.....		8	10		10	0	10	0
RED SANDERS.....		5	7		6	0	6	5
SAPAN, BIAS, &c.....		7	0		9	0	7	0